



UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
CALIFORNIA DESERT DISTRICT

# ***DRAFT ENVIRONMENTAL IMPACT STATEMENT***

## **DRAFT CALIFORNIA DESERT CONSERVATION AREA PLAN AMENDMENTS FOR THE NORTHERN AND EASTERN MOJAVE PLANNING AREA**



**JANUARY 2001**



LIBRARY

2 7 2006

Bureau of Reclamation  
Denver, Colorado

DATE DUE

# **BUREAU OF LAND MANAGEMENT**

## **MISSION STATEMENT**

**It is the mission of the Bureau of Land Management to sustain the health, diversity and productivity of the public lands for the use and enjoyment of present and future generations.**



1088071334

TD 19456 .C2 C35 2001 C.2



United States Department of the Interior  
BUREAU OF LAND MANAGEMENT

CALIFORNIA DESERT DISTRICT  
6221 BOX SPRINGS BOULEVARD  
RIVERSIDE, CA 92507-0714

(909) 697-5200  
www.ca.blm.gov



02  
QH  
76.5  
C2  
E56  
2001  
C.4

**DEAR READER:**

Enclosed for your review and comment is the Draft California Desert Conservation Area Plan Amendments and Environmental Impact Statement for Bureau-managed public lands in the Northern and Eastern Mojave Planning Area (NEMO). The Draft NEMO plan addresses the management of 2.4 million acres of public lands in southeastern California. This document analyzes several management alternatives. The Draft NEMO Plan will provide management guidance to maintain and enhance the public land health, provide recovery efforts for Threatened and Endangered species, comply with the California Desert Protection Act, designate routes of travel in desert tortoise Category I and critical habitat and adopt a desert-wide strategy for off-highway vehicle competitive events.

The decision to accept or reject these draft amendments will be based on a number of factors including the effect on the natural environment, meeting our statutory and policy requirements, input from the public, and recommendations from the Desert District Advisory Council. Public meetings are planned in the following locations for the purpose receiving oral and/or written comments: Barstow, Baker, Las Vegas, Lone Pine, Pahrump, Ridgecrest, Primm, Needles, Tecopa, Pasadena, and San Bernadino. A time limit may be placed on oral comments, depending on the number of people who wish to make a statement. A written copy of the presentation is requested, but not required, to accompany oral comments.

A website ([www.ca.blm.gov](http://www.ca.blm.gov)) is available with the following information; a PDF downloadable copy of the Draft Plan and Environmental Impact Statement; locations and times for public meetings, when scheduled; comment period timeframe and an address to send written comments. Notice of public meetings will also be published in your local newspaper. Publication of the Federal Register Notice of Availability, anticipated in March of 2001, begins the 90-day comment period for this document. Comments received during the 90 day period within the scope of this draft, will be considered and evaluated in preparation of the Final Environmental Impact Statement. Comments, by name, will be shared with the general public unless a specific request to withhold your name is received with your comments. Written comments should be marked "NEMO Comments" and sent to the **Bureau of Land Management, Attn: NEMO Plan Amendment Team, Barstow Field Office, 2601 Barstow Road, Barstow, CA. 92311.** For further information contact: Edythe Seehafer at the above address or telephone (760) 252-6021.

Sincerely,

Tim Salt  
District Manager

BLM Library  
Denver Federal Center  
Bldg. 50, OC-521  
P.O. Box 25047  
Denver, CO 80225



## ABSTRACT

The Draft 2000 California Desert Conservation Area Plan Amendments for the Northern and Eastern Mojave (NEMO) Planning Area address: (1) the adoption of standards of public land health with specific guidelines for livestock grazing; (2) the protection of threatened and endangered species, as well as species that may be considered for listing in the reasonably foreseeable future by evaluating the habitat requirements and necessary management actions for each such species; (3) multiple-use class of lands released from wilderness consideration and the changes necessary to conform the California Desert Conservation Area Plan to the California Desert Protection Act passed by Congress in 1994; (4) the adoption of an appropriate long-term strategy for motorized competitive speed events outside of Off-Highway-Vehicle open areas in the planning area; (5) the designation of routes of travel within the planning area; (6) elimination of permitted solid waste landfills from public lands in the planning area; and (7) the identification of rivers eligible for the National Wild and Scenic Rivers System in the planning area. The preparation of this document was coordinated with numerous individuals, Federal and State agencies, special interest groups and County governments.



# TABLE OF CONTENTS

<b>Dear Reader</b>	<b>I</b>
Abstract	II
Table of Contents	III
Executive Summary	XII
Preferred Alternative	XIV
Summary List of Preferred Alternatives	XVI

<b>1.0</b>	<b>Purpose and Need</b>	<b>1-1</b>
1.0	Introduction	1-1
1.1	Purpose and Need	1-1
1.2	Planning Process Overview	1-3
1.3	Major Issues	1-4
1.3.1	Adoption of Standards and Guidelines	1-4
1.3.2	T&E Conservation and Protection - Desert Tortoise	1-5
1.3.3	T&E Conservation and Protection - Amargosa Vole	1-7
1.3.4	T&E Conservation and Protection - Carson Slough Plants	1-8
1.3.5	T&E Conservation and Protection - Silurian Hills Bats	1-9
1.3.6	CDCA Plan Changes resulting from the California Desert Protection Act - Released Lands	1-10
1.3.7	CDCA Plan Changes resulting from the California Desert Protection Act - ACECs Considered for Deletion	1-11
1.3.8	Organized Competitive Vehicle Events	1-12
1.3.9	Motorized Routes of Travel Designations	1-12
1.3.10	Inyo County Landfills	1-14
1.3.11	Wild and Scenic River Eligibility: Amargosa River	1-14
1.4.	Relationship to Laws, Regulations and Policies	1-15
1.5	Framework of the CDCA Plan, 1980	1-15
1.6	Relationship to Other Plans	1-16
1.7	Plan Goals	1-18
<b>2.0</b>	<b>Proposed Actions and Alternatives</b>	<b>2-1</b>

Table 2-1	Summary List of Proposed Amendments	2-1
<b>2.1</b>	<b>Standards and Guidelines</b>	<b>2-2</b>
2.1.1	Alternative 1 (No Action)	2-4
2.1.1.1	Standards for Rangeland Health in the NEMO Planning Area	2-4
2.1.1.2	Rangeland Guidelines For Grazing Uses In The NEMO Planning Area	2-4
2.1.2	Alternative 2 (Preferred)	2-6
2.1.2.1	Standards for Public Land Health in the NEMO Planning Area	2-6
2.1.2.2	Rangeland Guidelines For Grazing Uses In The NEMO Planning Area	2-8



Table 2-2	Utilization Guidelines for different range types in the CDD	2-10
Summary	Proposed Standards and Grazing Management Guidelines	2-11
<b>2.2</b>	<b>Desert Tortoise Conservation and Recovery</b>	<b>2-12</b>
2.2.1	Alternative 1 (No Action) Desert Tortoise Recovery	2-13
2.2.1.1	Desert Wildlife Management Areas	2-13
Table 2-3	Category I Habitat within Proposed DWMA Units	2-14
2.2.1.2	General Management Strategy	2-14
2.2.1.3	Vehicle Management	2-15
2.2.1.4	Grazing Management	2-15
2.2.1.5	Burro Management	2-15
2.2.1.6	Land Tenure	2-16
2.2.2	Alternative 2: Desert Tortoise Recovery	2-16
2.2.2.1	Identify Wildlife Management Area Boundaries & MUC	2-16
Table 2-4a	Desert Tortoise Conservation and Recovery - Identify Area MUC	2-16
2.2.2.2	General Management Strategy	2-16
2.2.2.3	Vehicle Management	2-17
2.2.2.4	Grazing Management	2-18
2.2.2.5	Burro Management	2-18
2.2.2.6	Land Tenure	2-18
2.2.3	Alternative 3: Desert Tortoise Recovery	2-18
2.2.3.1	Identify Wildlife Management Area Boundaries & MUC	2-18
Table 2-4b	Desert Tortoise Conservation and Recovery - Identify Area MUC	2-19
2.2.3.2	General Management Strategy	2-19
2.2.3.3	Vehicle Management	2-19
2.2.3.4	Grazing Management	2-19
2.2.3.5	Burro Management	2-20
2.2.3.6	Land Tenure	2-20
2.2.4	Alternative 4: Desert Tortoise Recovery	2-20
2.2.4.1	Identify Wildlife Management Area Boundaries & MUC	2-20
Table 2-4c	Desert Tortoise Conservation and Recovery - Identify Area MUC	2-21
2.2.4.2	General Management Strategy	2-21
2.2.4.3	Vehicle Management	2-21
2.2.4.4	Grazing Management	2-21
2.2.4.5	Burro Management	2-22
2.2.4.6	Land Tenure	2-22
2.2.5	Alternative 5- Preferred: Desert Tortoise Recovery	2-22
2.2.5.1	Identify Wildlife Management Area Boundaries & MUC	2-22
Table 2-4d	Desert Tortoise Conservation and Recovery - Identify Area MUC	2-22
2.2.5.2	General Management Strategy	2-23
2.2.5.3	Vehicle Management	2-23
2.2.5.4	Grazing Management	2-23
2.2.5.5	Burro Management	2-23
2.2.5.6	Land Tenure	2-23
2.2.6	Implementation Strategy for the Conservation of the Desert Tortoise	2-23
Summary	Summary of alternatives: Desert Tortoise Recovery	2-24



Table 2-5	Summary of Grazing Alternatives	2-27
Table 2-6	Statistics for BLM and NPS Administered Allotments (acres)	2-28
Table 2-7	Area of Desert Tortoise Wildlife Management Area within BLM Allotments	2-28
<b>2.3</b>	<b>Amargosa Vole Conservation and Recovery</b>	<b>2-29</b>
2.3.1	Alternative 1 (No Action): Amargosa Vole Recovery	2-29
2.3.1.1	Amargosa Vole Management Area Options	2-29
2.3.1.2	Amargosa Vole Proposed Management Prescriptions	2-30
2.3.2	Alternative 2: Amargosa Vole Recovery	2-30
2.3.2.1	Amargosa Vole Management Area Options	2-30
2.3.2.2	Amargosa Vole Proposed Management Prescriptions	2-31
2.3.3	Alternative 3: Amargosa Vole Recovery (Preferred)	2-32
2.3.3.1	Amargosa Vole Management Area Options	2-32
2.3.3.2	Amargosa Vole Proposed Management Prescriptions	2-32
2.3.4	Alternative 4: Amargosa Vole Recovery	2-32
2.3.4.1	Amargosa Vole Management Area Options	2-32
2.3.4.2	Amargosa Vole Proposed Management Prescriptions	2-33
Summary	Summary of Alternatives: Amargosa Vole Recovery	2-34
<b>2.4</b>	<b>T&amp;E Plants in the Lower Carson Slough</b>	<b>2-36</b>
2.4.1	Alternative 1 (No Action): T&E Plants	2-37
2.4.1.1	Lower Carson Slough T&E Plant Conservation Area Options	2-37
2.4.1.2	Carson Slough T & E Management Direction and Strategies	2-37
2.4.2	Alternative 2: T&E Plants	2-37
2.4.2.1	Lower Carson Slough T&E Plant Conservation Area Options	2-37
2.4.2.2	Carson Slough T & E Management Direction and Strategies	2-37
2.4.3	Alternative 3: T&E Plants	2-38
2.4.3.1	Lower Carson Slough T&E Plant Conservation Area Options	2-38
2.4.3.2	Carson Slough T & E Management Direction and Strategies	2-38
Summary	Summary of Alternatives: Lower Carson Slough T&E Plants	2-39
<b>2.5</b>	<b>Bat Conservation in the Silurian Hills</b>	<b>2-40</b>
2.5.1	Alternative 1 (No Action) Silurian Hills Bat Conservation Area Options	2-40
2.5.2	Alternative 2: Silurian Hills Bat Conservation Area Options	2-40
2.5.3	Alternative 3: Silurian Hills Bat Conservation Area Options	2-40
Summary	Summary of Alternatives: Silurian Hills Bat Conservation Area Options	2-41
<b>2.6</b>	<b>CDCA Plan Maintenance Actions</b>	<b>2-42</b>
<b>2.7</b>	<b>California Desert Protection Act Implementation: MUC of Released WSA's</b>	<b>2-42</b>
2.7.1	Alternative 1 (No Action): Released Lands	2-43
2.7.2	Alternative 2: Released Lands	2-43
2.7.3	Preferred Alternative	2-44
Table 2-8	Released Lands: MUC of Released WSAs Identified Less than 500 ac	2-45
Table 2-9	Released Lands: Summary of Alternatives	2-45
Table 2-10	Released Lands: Multiple-Use Class of Released WSA's	2-46
Summary	Summary of Alternatives: Released Lands	2-47
<b>2.8</b>	<b>Greenwater Canyon ACEC Deletion</b>	<b>2-48</b>
2.8.1	Alternative 1 (No Action): Greenwater Canyon ACEC Deletion	2-48



2.8.2	Alternative 2: Greenwater Canyon ACEC Deletion (Preferred)	2-48
Summary	Summary of Alternatives: : Greenwater Canyon ACEC Deletion	2-48
<b>2.9</b>	<b>Organized Competitive Vehicle Events</b>	<b>2-49</b>
2.9.1	Alternative 1 (No Action)	2-49
2.9.2	Alternative 2:	2-50
2.9.3	Alternative 3:	2-51
2.9.4	Alternative 4	2-52
2.9.5	Alternative 5-Preferred:	2-52
Summary	Summary of Alternatives: Competitive Sport Speed Events	2-53
<b>2.10</b>	<b>Motor Vehicle Access: Routes of Travel Designation</b>	<b>2-54</b>
2.10.1	Alternative 1 (No Action)	2-59
2.10.2	Alternative 2	2-59
2.10.3	Alternative 3	2-61
2.10.4	Alternative 4	2-61
2.10.5	Alternative 5 (Preferred)	2-62
Summary	Summary of Alternatives: Routes of Travel Designations	2-63
<b>2.11</b>	<b>Landfills</b>	<b>2-65</b>
2.11.1	Alternative 1 (No Action): Landfill Disposal	2-65
2.11.2	Alternative 2: Landfill Disposal	2-65
Summary	Summary of Alternatives: Landfill Disposal	2-65
<b>2.12</b>	<b>Wild and Scenic River Eligibility</b>	<b>2-66</b>
<b>2.13</b>	<b>Considered but Dismissed from Further Analysis</b>	<b>2-67</b>
Summary	Summary Of Impacts Table	2-69

<b>3.0</b>	<b>Affected Environment</b>	<b>3-1</b>
------------	-----------------------------	------------

3.1	Vegetation	3-2
3.1.1	General Vegetation	3-2
Table 3-1	Vegetation	3-2
3.1.2	Special Status Plants	3-3
3.1.3	Biological Soil Crusts	3-3
3.1.4	Riparian and Wetland	3-4
3.1.5	Non-Native Invasive Plants	3-5
3.2	Wildlife	3-6
3.2.1	General Wildlife	3-6
3.2.2	Special Status Animals	3-7
3.2.3	Desert Tortoise	3-8
3.2.4	Amargosa Vole	3-9
3.2.5	North Mojave Desert Bats	3-9
3.2.6	Inyo Mountain Slender Salamander	3-10
3.2.7	Inyo California Towhee	3-10
3.2.7	Least's Bell's Vireo	3-11
3.2.8	Southwestern Willow Flycatcher	3-12
3.2.9	Swainson's hawk	3-12
3.2.10	Western Yellow Billed Cuckoo	3-13



3.3	Soil, Air and Water Resources	3-14
3.3.1	Soil	3-14
3.3.2	Water	3-15
3.3.3	Air Quality	3-16
3.4	Cultural and Native American Resources	3-17
3.5	Wild Horse and Burro	3-18
3.6	Cattle Grazing	3-19
Table 3-2	Grazing Allotment Resource Information	3-24
3.7	Wilderness	3-25
3.8	Recreation	3-25
3.8.1	Organized Competitive Vehicle Events	3-26
3.8.2	Dumont Dunes Open Areas	3-26
3.8.3	Dual-Sport Events	3-27
3.8.4	Vehicle Touring	3-27
3.8.5	Historic Trail Touring	3-27
Table 3-3	Major Historical Trails in the NEMO Planning Area	3-28
3.8.6	Nature Study	3-28
Table 3-4	Areas of Critical Environmental Concern (ACEC).	3-29
Table 3-5	Historic Hiking Trails	3-30
3.8.7	Camping	3-30
3.8.8	Lakebed Activities	3-30
Table 3-6	Dry Lakes	3-30
3.8.9	Rockhounding	3-31
Table 3-7	Rockhounding Sites	3-31
3.8.10	Shooting and Hunting	3-31
3.9	Vehicle Access	3-32
3.10	Mineral and Mining	3-33
3.11	Land Tenure	3-34
3.12	Regional Economy	3-34
3.13	Amendment Specific Affected Environment	3-35
Table 3-8	Affected Resources In The NEMO Planning Area	3-36
3.13.1	Standards and Guidelines	3-38
3.13.2	Desert Tortoise Management Area Boundary & Zoning Proposals	3-38
3.13.3	Amargosa Vole ACEC Proposal	3-48
3.13.4	Lower Carson Slough ACEC Proposal	3-53
3.13.5	Silurian Hills Bat Habitat Management Plan Proposal	3-54
3.13.6	Released WSA MUC Proposals	3-56
3.13.7	Greenwater Canyon Proposed ACEC Deletion	3-58
3.13.8	Competitive Speed Events Proposal	3-58
3.13.9	Motor Vehicle Access: Routes of Travel	3-62
3.13.10	Tecopa Landfill Proposed MUC Change	3-64
3.13.11	Shoshone Landfill Proposed MUC Change	3-64
3.13.12	Wild and Scenic Rivers	3-65



<b>4.0</b>	<b>Environmental Consequences</b>	<b>4-1</b>
<b>4.1</b>	<b>Standards and Guidelines</b>	<b>4-2</b>
4.1.1	Alternative 1 (No Action): Standards and Guidelines	4-3
4.1.2	Alternative 2: Standards and Guidelines	4-11
<b>4.2</b>	<b>Threatened and Endangered Species: Desert Tortoise</b>	<b>4-15</b>
4.2.1	Alternative 1 (No Action): Desert Tortoise	4-15
4.2.2	Alternative 2: Desert Tortoise	4-21
Table 4-2	Impacts to Grazing Allotments From Alternative 2	4-24
4.2.3	Alternative 3: Desert Tortoise	4-26
4.2.4	Alternative 4: Desert Tortoise	4-29
4.2.5	Preferred Alternative : Desert Tortoise	4-31
<b>4.3</b>	<b>Amargosa Vole Recovery</b>	<b>4-34</b>
4.3.1	Alternative 1 (No Action): Amargosa Vole	4-34
4.3.2	Alternative 2: Amargosa Vole	4-39
4.3.3	Alternative 3: Amargosa Vole	4-43
4.3.4	Alternative 4: Amargosa Vole	4-45
<b>4.4</b>	<b>Threatened and Endangered Plants</b>	<b>4-48</b>
4.4.1	Alternative 1 (No Action): Threatened and Endangered Plants	4-48
4.4.2	Alternative 2: Threatened and Endangered Plants	4-51
4.4.3	Alternative 3: Threatened and Endangered Plants	4-53
<b>4.5</b>	<b>Bat Conservation in the Silurian Hills</b>	<b>4-56</b>
4.5.1	Alternative 1 (No Action): Bat Conservation in the Silurian Hills	4-56
4.5.2	Alternative 2: Bat Conservation in the Silurian Hills	4-57
4.5.3	Alternative 3: Bat Conservation in the Silurian Hills	4-58
<b>4.6</b>	<b>Released Lands: MUC of Released WSAs</b>	<b>4-60</b>
4.6.1	Alternative 1 (No Action): Released Lands: MUC of Released WSAs	4-60
4.6.2	Alternative 2: Released Lands: MUC of Released WSAs	4-61
4.6.3	Preferred Alternative: Released Lands: MUC of Released WSAs	4-63
<b>4.7</b>	<b>Greenwater Canyon ACEC Deletion Proposal</b>	<b>4-65</b>
4.7.1	Alternative 1 (No Action): Greenwater Canyon	4-65
4.7.2	Alternative 2: Greenwater Canyon	4-65
<b>4.8</b>	<b>Organized Competitive Vehicle Events</b>	<b>4-67</b>
4.8.1	Alternative 1 (No Action)	4-67
4.8.2	Alternative 2	4-77
4.8.3	Alternative 3	4-79
4.8.4	Alternative 4	4-82
4.8.5	Alternative 5	4-84
<b>4.9</b>	<b>Motor Vehicle Access: Routes of Travel Designation</b>	<b>4-85</b>
4.9.1	Alternative 1 (No Action)	4-85
4.9.2	Alternative 2	4-88
4.9.3	Alternative 3	4-90
4.9.4	Alternative 4	4-92
4.9.5	Alternative 5	4-92
<b>4.10</b>	<b>Bureau Policy on Landfills: Proposed Landfill MUC Change for</b>	<b>4-93</b>



<b>4.10</b>	<b>Bureau Policy on Landfills: Proposed Landfill MUC Change for disposal - Tecopa and Shoshone</b>	<b>4-93</b>
4.10.1	Alternative 1 (No Action): Landfills	4-93
4.10.2	Alternative 2 (Preferred): Landfills	4-94
<b>4.11</b>	<b>Wild and Scenic River Eligibility</b>	<b>4-95</b>
<b>4.12</b>	<b>Cumulative Impacts</b>	<b>4-95</b>
4.12.1	Vegetation and Wildlife	4-97
4.12.2	Soil, Water and Air	4-101
4.12.3	Wilderness	4-102
4.12.4	Cultural and Native American Values	4-103
4.12.5	Wild Horse and Burro	4-103
4.12.6	Cattle Grazing	4-103
4.12.7	Utilities	4-104
4.12.8	Recreation	4-105
4.12.9	Minerals and Mining	4-105
4.12.10	Vehicle Access	4-105
4.12.11	Land Tenure	4-106
4.12.12	Socioeconomic	4-106
<b>4.13</b>	<b>Irretrievable and Irreversible Commitments</b>	<b>4-107</b>
4.13.1	Vegetation and Wildlife	4-107
4.13.2	Soil, Water and Air Resources	4-107
4.13.3	Cultural and Native American Values	4-107
4.13.4	Wild Horse and Burro	4-108
4.13.5	Cattle Grazing (and Allotments)	4-108
<b>4.14</b>	<b>Long-Term Verses Short-Term Use</b>	<b>4-108</b>
<b>4.15</b>	<b>Environmental Justice</b>	<b>4-109</b>
<b>5.0</b>	<b>Consultation and Coordination</b>	<b>5-1</b>
5.1	Public Involvement	5-1
5.1.1	Planning Process	5-1
5.1.2	Issue Summary	5-2
5.2	Interagency Coordination and Consultation	5-3
5.2.1	National Park Service	5-3
5.2.2	United States Fish and Wildlife Service	5-3
5.2.3	SHPO/CA-SHPO	5-5
5.2.4	Other Bioregional Planning Teams	5-6
5.3	Native American Consultation	5-6
List	Persons/Agencies Receiving Document	5-7
Table 5-1	NEMO Scoping Comments	5-16
<b>6.0</b>	<b>Document Support</b>	<b>6-1</b>
6.1	List of Preparers	6-1
6.2	Literature Sited	6-2



6.3	Glossary	6-7
6.4	Acronyms and Abbreviations	6-29

<b>7.0</b>	<b>Geographic Information Index (MAPS)</b>	<b>7-1</b>
------------	--	------------

1	The Northern & Eastern Mojave Planning Vicinity
2	Grazing Allotments in the Planning Area
3	NEMO Active Mines and Mineral Potential
3b	Inactive Mines in the NEMO Planning Area
4a	Route Network- Piute-Fenner
4b	Route Network- Ivanpah Valley
4c	Route Network- Shadow Valley
5a	NEMO Released Lands - Alternative 1 (No Action)
5b	NEMO Released Lands - Alternative 2
5c	NEMO Released Lands - Alternative 3
6a	Desert Tortoise Recovery - Alternative 1 (No Action)
6b	Desert Tortoise Recovery - Alternative 2
6c	Desert Tortoise Recovery - Alternative 3
6d	Desert Tortoise Recovery - Alternative 4
6e	Desert Tortoise Recovery - Preferred Alternative
7a	Grazing Management - Alternative 1 (No Action) & 4
7b	Grazing Management - Alternative 2
7c	Grazing Management - Alternative 3 & 5
8a	BLM Herd Areas and Herd Management Areas
8b	Extent of Burro Range in the NEMO Planning Area
8c	Burro Management for Desert Tortoise Recovery - Alternatives
9a	Alternative 1: Vole Recovery in the Central Amargosa
9b	Alternative 2 - Vole Recovery in the Central Amargosa
9c	Alternative 3 - Vole Recovery in the Central Amargosa
9d	Alternative 4 - Vole Recovery in the Central Amargosa
9e	Alternatives 2&3 - Vole Recovery in the Upper Amargosa
10	Carson Slough Threatened and Endangered Plant Conservation Alternatives
11	Silurian Hills Bat Conservation Alternatives
12	Greenwater ACEC Deletion Proposal
13a	NEMO Proposed Land Tenure
13b	NEMO Proposed Land Tenure, Tecopa - Shoshone Area
13c	NEMO Proposed Land Tenure - Mesquite Lake Area
13d	NEMO Proposed Land Tenure - Baker Area
14	Barstow-To-Vegas Corridor Alternatives



## APPENDICES

<b>A</b>	Proposed Desert Tortoise Conservation Strategy
<b>B</b>	NEMO Implementation Strategy
<b>C</b>	Description and Strategy for Addressing Major Desert Tortoise Issues
<b>D</b>	Desert Tortoise Monitoring
<b>E</b>	Cattle, Wild Horse and Burro Grazing Use Guidelines in NEMO Desert Tortoise Habitat
<b>F</b>	New Surface Disturbances and Rehabilitation Strategies
<b>G</b>	Recommended Special Management Actions for T&E Plant Recovery
<b>H</b>	Recommended Special Management Actions for the Recovery of the Amargosa Vole
<b>I</b>	Species of Special Consideration in NEMO
<b>J</b>	Upland Public Lands Assessment Criteria / Proper Functioning Condition
<b>K</b>	Current Management Situation
<b>L</b>	Planning Criteria for the NEMO Planning Effort
<b>M</b>	Summary of CDCA Plan Maintenance Actions Resulting From the CDPA
<b>N</b>	Land Tenure Strategy for the NEMO Planning Area
<b>O</b>	Wild and Scenic River Eligibility Report for the Amargosa River
<b>P</b>	Development of Standards for Public Land Health and Grazing Management Guidelines
<b>Q</b>	Route Designation Process and Methodology
<b>R</b>	List of G-E-M Resource Areas
<b>S</b>	Wild and Scenic River Eligibility Report for Cottonwood Creek
<b>T</b>	Wild and Scenic River Eligibility Report for Surprise Canyon



## EXECUTIVE SUMMARY

The Northern and Eastern Mojave (NEMO) Planning effort addresses nine events which have changed the current management situation for the Bureau of Land Management (BLM) in the California Desert Conservation Area:

- (1) adoption of a National BLM policy, initiated in 1993, directing the development of standards for public land health, and guidelines for grazing management on public lands;
- (2) listing of the desert tortoise (*Gopherus agassizii*) as threatened under the State and Federal Endangered Species Act (s)(ESAs), designation of critical habitat for this species, and publication of a recovery plan;
- (3) listing of the Amargosa vole (*Microtus californicus scirpensis*) as endangered under the State and Federal ESAs, designation of critical habitat for this species, and publication of a recovery plan;
- (4) listing of the Amargosa niterwort (*Nitrophila mohavensis*) as endangered under the State and Federal ESAs, and the Ash Meadows gumplant (*Grindelia fraxino-pratensis*) and spring-loving centaury (*Centaureum namophilum* var. *namophilum*) as threatened under the Federal ESA, and designation of critical habitat for the former two plant species;
- (5) increasing concern for population status and the possible need for the listing of several bat species as threatened or endangered under the State and Federal ESAs;
- (6) passage of the California Desert Protection Act of 1994 (CDPA) and the need to conform the CDCA Plan to it: including the need to address competitive speed events now that a portion of the Barstow-to-Vegas OHV Race Course is in the Mojave National Preserve;
- (7) implementation of BLM policy to provide for designation of specific routes of travel through the land-use planning process.
- (8) adoption of new BLM policies directing the elimination of landfills on public lands; and
- (9) implementation of BLM policy to identify potentially eligible rivers on BLM-managed lands for the Wild and Scenic Rivers System.

The proposed plan amendments and alternatives discussed in Chapter Two identify a range of alternatives to address each of the purpose and need statements in Chapter One. Some actions require amendment of the California Desert Conservation Area Plan in order to implement them, while others do not; and amendment of the CDCA Plan is to occur as part of this planning effort. A summary list of proposed Plan Amendments and a summary of impacts to the "No Action" and "Action" alternatives are provided at the end of this Executive Summary.

The Affected Environment section of this document describes the environment affected by these plan decisions on BLM-administered public lands within the NEMO Planning Area. A complete description of the resources can be found in the CDCA Plan and EIS and is incorporated by reference. (40CFR 1502.21). The existing management situation for the Planning Area is summarized in Appendix K. A separate, more detailed, existing management situation for the desert tortoise and the resource values and uses of its habitat in the NEMO Planning Area was prepared in April, 1998, and is available for review at local BLM offices in Needles, Barstow, Ridgecrest and Riverside, California. This document is also posted on the NEMO web site at [www.ca.blm.gov](http://www.ca.blm.gov)



Alternative proposals presented in Chapter 2 of this document were screened and evaluated with regard to the critical elements and other major land-use planning elements of the human environment. Elements, which are present and affected, are described in further detail, focussing on potentially affected resources.

The analysis of environmental consequences in Chapter Four is organized, first, by plan amendment type, where plan amendments are involved. These are discussed in the following order:

- 1) Adoption of Standards and Guidelines,
- 2) Threatened and Endangered Species conservation and protection,
- 3) CDCA changes proposed as a result of the California Desert Protection Act,
- 4) Competitive Speed Events,
- 5) Motor vehicle Routes of Travel designation
- 6) Strategies to eliminate landfills, and
- 7) Wild & Scenic River Eligibility addressed within Amargosa vole conservation strategies analysis,

Secondly, Chapter 4 is organized by resource element or use that may be affected. Elements of the human environment that were identified as likely to be affected by one or more of the alternatives are T&E species, vegetation, wildlife, air quality, soils, areas of critical environmental concern (ACEC), cultural resources, Motor vehicle access, Native American values, recreation, socioeconomic values, mining, water quality and quantity, Wild & Scenic Rivers, wild horses and burros, cattle grazing, general land uses, wetlands and riparian habitat, and invasive species.

Impacts for each amendment/proposal are organized so that Alternative 1 “No Action” is discussed first. When there are multiple alternatives, Alternative 2 and any other alternatives are arranged in descending order of relative conservation emphasis and increasing order of use or access emphasis, as with Chapter 2. The agency preferred alternative is identified as such. The preferred alternative may change as a result of other agency and public review.

### **Summary Of Actions requiring CDCA Plan Amendment**

The following actions may require an amendment to the California Desert Conservation Plan and are evaluated in this document. These proposals would result in amendment of the California Desert Conservation Area Plan, if one or more alternatives are selected. Some alternatives may not result in amendment of the CDCA Plan.

- Adopt standards of public land health and modify guidelines for grazing management;
- Establish Desert Tortoise Wildlife Management Areas (DWMAs) and adopt management strategies within DWMA boundaries;
- Change Wildlife Habitat Management Planning (WHMP) designation to Area of Critical Environmental Concern designation for desert tortoise and modify boundaries to implement management strategies in DWMAs;
- Assign MUC L (change some MUC M to L) to all public lands within DWMAs;
- Assign (modify) desert tortoise Category boundaries to coincide with DWMA boundaries, with Category I habitat inside DWMAs and Category III habitat outside of DWMAs;



- Designate routes of travel within the Planning Area;
- Modify parking, stopping and camping guidelines for DWMAs;
- Modify grazing management to recover the desert tortoise;
- Modify burro management to recover the desert tortoise;
- Expand the Amargosa Natural Area (Vole) ACEC, adopt management strategies (Upper and Central Amargosa) and adjust MUC to recover vole and facilitate land tenure and watershed management;
- Establish the Carson Slough ACEC and adopt management strategies to protect threatened and endangered plants;
- Modify the MUC of the Silurian Hills to conserve sensitive bats;
- Establish MUC for 475,000 acres of released Wilderness Study Area (WSA);
- Evaluate the remnant Greenwater Canyon ACEC (820 acres) for possible deletion based on importance and relevance criteria;
- Develop a strategy for organized competitive events outside of OHV open areas, considering possible elimination of the Barstow-to-Vegas race course and alternative strategies in the planning area;
- Change the Tecopa Landfill MUC L to U making it available for disposal;
- Change the Shoshone Landfill MUC L to U making it available for disposal; and
- Determine segments of three rivers as suitable in the National Wild and Scenic Rivers System. This amendment would be triggered by Congressional and/or State action, after follow-up suitability analyses and EIS are submitted to Congress and/or California, if followed up by their designation action

### **Preferred Alternative**

The CDCA Plan framework provided for and anticipated changes that the BLM addresses in this document for the NEMO planning area. These include: (1) changes in status to sensitive species, including potential future threatened and endangered species listings and mechanisms to deal with these threats; (2) designation of wilderness (i.e., the California Desert Protection Act) and a mechanism to return lands that are not designated as wilderness, wilderness study areas, or other special areas to multiple-use management; and (3) designation of specific routes of travel in the various Multiple-Use Classes. New policies on landfills and Wild and Scenic Rivers were not anticipated at the time of CDCA Plan development.

The preferred alternative utilizes the existing CDCA Plan framework and supplements that framework as needed to provide for a regional solution to issues. In the East Mojave, population density is the lowest of the large bioregions identified in the CDCA, approximately 50% of the public lands are managed for wilderness or are in wilderness study area status, and adjacent large units are managed by the National Park Service or the Department of Defense, providing a rural economic picture in the NEMO planning area. On the other hand, one of the fastest growing metropolitan area in the United States of the 1990's, Las Vegas, is located within 50 miles of the planning area, which serves as a great through-point between Las Vegas and Los Angeles. A change in direction may be on the horizon, with increased pressures from adjacent urbanization and the



populations that this urbanization will bring to an area that has not had to deal with such pressures in the past.

The preferred alternative proposes to put in place measures to assure that the pace of development will not accelerate on public lands in the NEMO planning area in sensitive areas, and where acceleration of development is already a threat, proactive measures are proposed to assure adequate protection of sensitive public lands and resources, including T&E species, and the Wild and Scenic River resources of the planning area. A large portion of the landbase of the NEMO planning area already has motorized access restrictions as a result of expansion of park lands and designation of wilderness, and more restrictions may occur as a result of Fort Irwin expansion and Timbisha Indian reservation designation in the reasonably foreseeable future. Therefore, to the extent feasible, the preferred alternative provides a public access network to the remaining public lands in the East Mojave where it does not jeopardize T&E conservation and recovery. The following table provides a summary of the proposed access designations.

<b>MILES OF ROUTES DESIGNATED IN DWMA's</b>		
<b>Access</b>	<b>Total Miles</b>	<b>Percentage</b>
<b>Open</b>	<b>7,490</b>	<b>87%</b>
<b>Limited</b>	<b>549</b>	<b>6%</b>
<b>Closed</b>	<b>521</b>	<b>6%</b>

Future route designation in the Planning Area will occur with this same general goal in mind, consistent with the criteria set forth in 43 CFR 8342.1. The preferred alternative, and the various issues addressed, is summarized in the following table.



Issue	NEMO Preferred Alternative
Public Land Health	<ul style="list-style-type: none"> <li>• Adopt a set of regional standards of public land health in the NEMO Planning. These regional standards would replace the fallback standards currently in effect. Regional standards of public land health address all resource and uses on all public lands and cover five environmental components to be applied in the context of public land management.</li> <li>• Adopt a set of regional guidelines in the NEMO Planning Area for grazing management. These regional guidelines would replace the current fallback guidelines and include additional tools (e.g. wildfire) and a more comprehensive set of guidelines. They would identify grazing management practices to achieve the regional standards and would address the principles of grazing management practices as identified in 43 CFR 4180.2.</li> </ul>
T&E & Special Status Species Protection	<p><b>Desert Tortoise</b></p> <ul style="list-style-type: none"> <li>• Designate 2 DWMMAs consisting of 3 ACECs totaling 312,485 acres</li> <li>• Management units (CAT 1) 279,195 – MUC L or C</li> <li>• Piute-Fenner 173,850 30,010 – MUC M to L (Change)</li> <li>• Ivampah Valley 37,280 312,485 – CAT I - DWMA</li> <li>• Shadow Valley 101,355</li> <li>• Utilize a Programmatic consultation in all DT habitat to cover activities of 100 acres or less. Proposals that require separate consultations include: Any proposal that would disturb more than 100 acres except in the following instance: a proposal for an electrical transmission line or pipeline within an existing CDCA Plan utility corridor for which the NEPA mechanism is an EA and not an EIS.</li> </ul> <p>There are 3 triggers for consultations:</p> <ol style="list-style-type: none"> <li>1. Any proposal that would disturb more than 100 acres.</li> <li>2. Any project for which the NEPA mechanism is an EIS, regardless of the size of the project</li> <li>3. Any project which can only be considered through a plan amendment process, regardless of the size of the project. This requirement applies to all areas of tortoise habitat- both inside and outside DWMMAs.</li> </ol> <ul style="list-style-type: none"> <li>-Cumulative new surface disturbance limits 1%;</li> <li>-Project specific disturbance limits 100 acres.</li> <li>-Adopt DT strategy prescriptions &amp; Mitigation (APP A)</li> <li>-A cooperative phased raven mgt. Program</li> <li>• Designate routes of travel in the three proposed units of the identified DWMA, consistent with Federal regulation and the existing route inventory.</li> </ul> <p>Rules for parking and camping would be modified as follows:</p> <ul style="list-style-type: none"> <li>-Parking and camping will be allowed within 100 feet of route centerline within the proposed DWMA.</li> <li>-All navigable washes would be designated as Closed.</li> <li>-Interpretive signing and informational kiosks will be installed.</li> <li>• Utilize Regional Standards and Guidelines for Grazing Management, CDCA Plan, allotment management plans, and terms and conditions from the existing USFWS biological opinions. For allotments within the DWMMAs:</li> <li>• Allow voluntary relinquishment of grazing leases, and related authorizations.</li> <li>• Temporary nonrenewable grazing use (perennial) will not be authorized.</li> <li>• Cattle shall be removed from the DWMA as per the grazing strategy from 3/15 to 11/1 during years when ephemeral forage production is less than 230 pounds per acre. The grazing strategy will be developed within a year and implemented within two years. The Strategy shall be a written plan detailing the area of removal, natural cattle movements, existing and potential improvements, and other constraints of cattle management.</li> <li>• Terminate ephemeral allotments and terminate ephemeral authorization for ephemeral/perennial allotments.</li> <li>• Modify the Clark Mountain HMA to exclude that area located within the proposed DWMMAs. The reestablished HMA boundary would be adjacent to the Nevada border north of I-15, in northern Ivampah Valley. The AML would be 60 burros, per existing CDCA recommendations, pending the outcome of a revised 5-year carrying capacity analysis.</li> <li>• Acquire all lands in the DWMMAs from willing sellers</li> </ul>



Issue	NEMO Preferred Alternative
<p><b>Amargosa Vole</b></p>	<p>Designate the Amargosa River ACEC. This alternative would affect 8,050 acres of public lands in addition to the existing ACEC acreages, including:</p> <ul style="list-style-type: none"> <li>• suitable riparian habitat located east of the current Amargosa Canyon ACEC (2,400 acres in the China Ranch Wash area);</li> <li>• other suitable riparian habitat located upstream from these areas to a point located one mile south of Shoshone (3,520 acres);</li> <li>• Upper Amargosa Mesquite Bosque WHMA (950 acres);</li> <li>• designated Amargosa vole critical habitat not in the existing ACECs (1,180 acres of public lands); and</li> </ul> <p>Would identify State (1,280 acres) and private (760 acres in addition to the 630 acres already identified in the existing ACEC Plans) lands for possible Federal exchange or acquisition from willing landowners and inclusion in the Amargosa River ACEC. This would include the same areas for acquisition as Alternative 2 except lands in the Shoshone/Tecopa area (approximately 600 acres).</p> <p>Immediately integrate strategies and measures prescribed in the existing Amargosa Canyon and Grimshaw Lake Natural Area ACEC Management Plans, as modified by recommended strategies and actions specified in the Amargosa Vole Recovery Plan, into a single coordinated management plan, focused on riparian ephemeral wetland and mesquite bosque resource protection and monitoring along the entire length of the proposed Amargosa River ACEC. (Refer to Appendix H for an outline of these recommended strategies and actions). The management plan for this ACEC would be augmented and adjusted to address additional issues of concern for long-term management of the vole and other sensitive, threatened and endangered species occurring along this riverine system, within three years. This ACEC Management Plan would also include a programmatic consultation with the USFWS, should the scope of actions and activities detailed in that plan warrant such consultation. Issues, strategies and measures to be addressed in this proposed ACEC Management Plan would include:</p> <ul style="list-style-type: none"> <li>• maintain viable populations of Amargosa vole;</li> <li>• develop monitoring, and in general, additional information about Amargosa vole populations and habitat use;</li> <li>• conduct additional plant and wildlife inventory work to identify all locations of special status species in the affected management unit, and develop appropriate measures to protect those found;</li> <li>• develop strategies for riparian resource protection and monitoring in cooperation with private landowners and other Federal, State, and local agencies;</li> <li>• identify mechanisms to track progress in reaching the goals specified in the Amargosa Vole Recovery Plan;</li> <li>• conserve and protect Amargosa watershed, riparian, ephemeral wetland and mesquite bosque resources;</li> <li>• conduct route designation in conjunction with the ACEC Management Plan.</li> <li>• implement a land tenure strategy, targeting suitable Amargosa vole habitat within the expanded ACEC (Refer to Appendix N). Where land acquisition or exchange is not identified, conservation easements, cooperative riparian management strategies, and other measures would be utilized. BLM would work with interested landowners to maximize the potential for recovery of the Amargosa vole;</li> <li>• protect riparian habitat utilized by four listed neotropical migratory bird species;</li> <li>• conserve other natural area values; and</li> <li>• develop a suitability determination for Wild and Scenic River designation in areas determined eligible in this planning effort. (Refer to Appendix O)</li> </ul>
<p><b>T&amp;E Plants</b></p>	<p>Combine the two critical habitat units for the Amargosa niterwort and Ash Meadows gumplant to create one Lower Carson Slough ACEC (4,340 acres). The Lower Carson Slough ACEC would be dedicated to conservation of special status plant populations in the ACEC, Amargosa River watershed values, ephemeral wetlands mesquite bosques and riparian areas. The ACEC would be comprised of the following elements:</p> <ul style="list-style-type: none"> <li>• Amargosa niterwort critical habitat 1,200 acres</li> <li>• Ash Meadows gumplant critical habitat 340 acres</li> <li>• Lower Carson Slough linkage 2,800 acres</li> </ul>



Issue	NEMO Preferred Alternative
	<p>Establish a strategy for the proposed Lower Carson Slough ACEC to accomplish the conservation objectives for special status plants and riparian ephemeral wetland and mesquite bosque habitats. Integrate this strategy with that to be developed for the proposed Amargosa River ACEC The Lower Carson Slough ACEC Management Plan would be completed within 3 years and would include an Endangered Species Act consultation with the USFWS if the scope of actions warrants such consultation. Actions would include the following:</p> <ul style="list-style-type: none"> <li>• Identify locations of threatened, endangered and sensitive species and develop appropriate measures to protect them;</li> <li>• Develop a monitoring program for and determine habitat needs of Amargosa niterwort, Ash Meadows gumpplant, spring-loving centaury and Tecopa birdsbeak;</li> <li>• Implement route designations;</li> <li>• Develop a strategy for conservation and monitoring of ephemeral wetlands, mesquite bosques and riparian areas in cooperation with adjacent private landowners and other Federal, State, and local agencies; and</li> <li>• Identify mechanisms to track progress in reaching special status plant population and recovery goals;</li> <li>• Conduct route designation in conjunction with the ACEC Management Plan.</li> <li>• Develop guidelines for road construction and other activities adjacent to special status plant populations;</li> <li>• Administratively change the Appropriate Management Level (AML) for wild horses and burros from 28 horses and 28 burros to 12 horses and 0 burros to protect impacts on special status plants. This change reflects the current management strategy.</li> <li>• Delineate the Amargosa aquifer and develop a strategy in cooperation with other Federal, State, and local agencies to safeguard surface and groundwater flows.</li> </ul>
<b>Bats</b>	<p>Change the existing Moderate MUC to Limited designation and establish standard mitigation measures for 7,400 acres of public land in the Silurian Hills region, known to support extensive habitat for several designated sensitive bat species. Route designation would occur on MUC L lands, including seasonal limitations and/or closures to sensitive bat values (e.g. active bat maternity roosts).</p> <p>Mitigation would be based on regional standards for public land health and MUC guidance, and would be accomplished within 12 months. Issues to be addressed in these measures include:</p> <ul style="list-style-type: none"> <li>• specific mitigation strategies for active mining operations and reclamation strategies for inactive minesites, which preserve the potential for bat use and may be applied on a programmatic basis; and</li> <li>• other specific mitigation measures that can be applied to activities, which may impact bats or bat habitat and which potentially, may be applied programmatically.</li> </ul>
<b>MUC for released WSAs</b>	<p>Designated consistent with the original CDCA Plan findings except in the following locations where MUC of lands surrounding have been redesignated and new data substantiate need. *Acres of public lands released from further wilderness review by Congress as Multiple-Use Class Limited and *acres of public lands as Moderate. Locations where changes have been made: MUC M - 75,380</p> <p>MUC L - 392,920</p> <ul style="list-style-type: none"> <li>• Cerro Gordo (*21,244 acres)</li> <li>• Surprise Canyon (*849 acres)</li> <li>• Greenwater (3,000 acres)</li> <li>• Eagle Mountain (15,746 acres)</li> <li>• East of China Ranch (4009 acres)</li> <li>• Dumont (17,401 acres)</li> <li>• Boulder Corridor W &amp; E (11,593)</li> <li>• Mesquite Springs (18564 acres)</li> </ul>
<b>Greenwater Canyon ACEC Deletion</b>	<p>The Greenwater Canyon Cultural ACEC would be deleted and the 820 acres remaining under BLM jurisdiction would be managed according to MUC Limited guidelines</p>



NEMO Preferred Alternative	
Issue	Organized Competitive Vehicle Events
	<p>Amend the California Desert Conservation Area Plan to:</p> <ul style="list-style-type: none"> <li>a) Remove delineation of the Barstow-to-Las Vegas Race Course from the Land Use Map of the California Desert Conservation Area Plan, (1980 as amended).</li> <li>b) Replace the text in the section titled Organized Competitive Vehicle Events under the Recreation Element of the CDCA Plan with: <u>Competitive vehicle events may only be held in MUC L with an area designation of "Open"</u>.</li> <li>c) Amend the MUC Guidelines to delete all reference to organized competitive vehicle events in MUC L and M, under recreation.</li> </ul>
Motor Vehicle Access: Routes of Travel	
	<p>Designate routes in accordance with criteria in 43 CFR 8342.1.</p> <ul style="list-style-type: none"> <li>• Amend the CDCA Plan Motorized-Vehicle Access Element to manage routes of travel in accordance with MUC Limited guidelines irrespective of Multiple-Use Class, except in MUC "C" (Wilderness) and in areas designated "Open" for vehicle use.</li> <li>• Designate "existing" routes, including navigable washes, that have been individually identified (per 1979 maps) "open" for motor-vehicle use with the same exceptions as Alternative 2, with the following modification for washes: <ul style="list-style-type: none"> <li>- Evaluate existing washes as potential routes, including navigable washes, on a case-by-case basis, based on their contribution to the primary transportation network and providing access to specific recreational destinations, consistent with criteria.</li> </ul> </li> <li>• In addition to the above general exceptions, in the Desert Tortoise DWMA, routes would be designated "open" for motor-vehicle use with the following additional exceptions: <ul style="list-style-type: none"> <li>- Three routes (11 mi.) that were closed through the initial route designation process in 1979, two in Shadow Valley and one in Northern Ivanpah, would be designated as "closed" for motor-vehicle use.</li> <li>- Routes where specific biological parameters proposed under this alternative are applied to meet desert tortoise DWMA goals and objectives (see appendix A), shall be designated "closed" or "limited" as appropriate.</li> </ul> </li> <li>• In addition, non-existent and wilderness routes not included and designated as "closed" would be the same as Alternative 1 (No Action)</li> </ul>
Landfills	
	<p>On 29.4 acres encumbered by the former and current Tecopa community landfill site, public lands would be redesignated from MUC Limited to Unclassified to facilitate conveyance out of Federal ownership to the County of Inyo.</p>
	<p>On 50 acres encumbered by the former and current Shoshone community landfill site, public lands would be redesignated from MUC Limited to Unclassified to facilitate conveyance out of Federal ownership to the County of Inyo.</p>
Wild and Scenic Rivers	
	<p>The WSR Act and Federal guidelines require Federal agencies, upon determination of WSR eligibility, to provide interim protection and management for a river's free-flowing character and any identified outstandingly remarkable values, subject to valid existing rights, until such time as a suitability study is completed. Refer to Appendix O for a description of the outstanding remarkable values that will benefit by this eligibility determination. During this interim period all proposals that could affect the Amargosa River, Cottonwood Creek, and Surprise Canyon and their resources will be evaluated against the regulatory criteria and additional limits on uses may occur. Further analysis of potential impacts to all resources and uses will be evaluated during the suitability analysis.</p>







## 1.0 INTRODUCTION

The document consists of proposed management actions and alternatives for public lands in the Northern and Eastern Mojave (NEMO) Planning Area and a draft environmental impact statement (DEIS) which analyzes the effects of all alternatives for public review and comment<sup>1</sup>. The Northern and Eastern Mojave (NEMO) Planning Area encompasses 3.3 million acres of which 2.4 million acres are public lands.<sup>2</sup> This Planning Area is located in the Mojave Desert in southeastern California adjacent to Nevada (Refer to Figure 1, Chapter 7).

The public lands in the NEMO Planning Area are intermingled with private and State holdings, but exist generally in three large blocks split by two large National Park Service Units: Death Valley National Park (DVNP) and the Mojave National Preserve<sup>3</sup> (MNP). The NEMO Planning Area borders Nevada on the east, Fort Irwin and the West Mojave Planning Area on the west, and I-40 and the Northern and Eastern Colorado Planning Area on the south. The northern Planning Area boundary is the California Desert Conservation Area (CDCA) boundary, formed along the Inyo Mountains and its adjacent valleys. Most of the adjacent land in Nevada is also managed by the Bureau of Land Management under the jurisdiction of the Las Vegas Field Office.

### 1.1 PURPOSE AND NEED

The California Desert Conservation Area (CDCA), is 25 million acres comprising one of two national conservation areas established by Congress at the time of the passage of the Federal Land and Policy Management Act (FLPMA)<sup>4</sup>. FLPMA provided how the Bureau of Land Management should manage public lands, and recognized that the California desert is fragile, and contains historic, scenic, archaeological, environmental, biological, cultural, scientific, educational, recreational, and economic resources that are uniquely located adjacent to areas of large population in southern California and southern Nevada. The use of all California desert resources can and should be provided for in a multiple-use and sustained yield management manner to conserve these resources for future generations while providing for present and future uses. Congress specifically provided guidance for the management of the CDCA, including the formation of the Desert Advisory Council, and directed the development of the 1980 CDCA Plan

As large and diverse as the California desert is, many different interests are represented. These include federal, State, and local agencies that manage lands and resources, and people that live and work in the area, come to the desert for recreational pursuits, and regularly pass through this area on their way to other places. Utilizing a multi-

---

<sup>1</sup> The EIS is being prepared in accordance with the National Environmental Policy Act of 1969 (42 U.S.C. 4321, et seq.) and implementing regulations (40 CFR 1500, et seq.), to address the potential impacts of all of the alternatives, including No Action.

<sup>2</sup> Public Lands as referred to in this document are those federal lands managed by the Bureau of Land Management.

<sup>3</sup> Mojave National Preserve and Death Valley National Park have each released separate draft Environmental Impact Statements and General Management Plans covering the lands within their jurisdictions in the NEMO Planning Area.

<sup>4</sup> Federal Land Policy and Management Act of 1976. Title VI. Section 601. 90 Stat. 2743, PL 94-579.



disciplinary planning process, these multiple interests, through dialogue and their collective resources, expertise, and experiences, sought in 1980 with the adoption of the CDCA Plan to begin the definition of public land health for desert landscapes; to find the balance between protection and use that assures future generations sustained yield while allowing current generations to enjoy and use desert resources; and to be good neighbors in an area where we have many neighbors.

The CDCA Plan recognized that as conditions change and information is gathered and updated, modifications would be made to the Plan. As a result, plan amendments have been proposed to the CDCA Plan on a fairly regular basis. Nine events have created changes in circumstances on public lands in the Northern and Eastern Mojave Planning Area; the events have triggered proposed plan amendments to the CDCA Plan that are presented and analyzed in this document. These events provide the purpose and need for this planning effort and include:

- adoption of National BLM policy directing the development of standards for public land health, and guidelines for grazing management on public lands;
- listing of the desert tortoise (*Gopherus agassizii*) as threatened under the State and Federal Endangered Species Act(s) (ESAs), designation of critical habitat for this species and publication of a recovery plan;
- listing of the Amargosa vole (*Microtus californicus scirpensis*) as endangered under the State and Federal ESAs, designation of critical habitat for this species and publication of a recovery plan;
- listing of the Amargosa niterwort (*Nitrophila mohavensis*) as endangered under the State and Federal ESAs, listing of Ash Meadows gumplant (*Grindelia fraxino-pratensis*) and spring-loving centaury (*Centaureum namophilum* var. *namophilum*) as threatened under the Federal ESA, and designation of critical habitat for the former two plant species;
- increasing concern for population status and the possible need for the listing of several bat species as threatened or endangered under the State and Federal ESAs;
- passage of the California Desert Protection Act of 1994 (CDPA) and the need to conform the CDCA plan to it; including the need to address competitive speed events now that a portion of the Barstow-to-Vegas OHV Race Course is in the Mojave National Preserve;
- implementation of BLM policy directing all specific routes of travel designations be completed as land-use planning decisions;
- adoption of new BLM policies directing the elimination of landfills on public lands, either through closure or transfer out of federal ownership; and
- implementation of BLM policy to identify potentially eligible rivers on BLM-managed lands and develop suitability analyses for the Wild and Scenic Rivers System.

The BLM, California Desert District has initiated plan amendments to the CDCA Plan for the NEMO Planning Area in accordance with Chapter 7 of the CDCA Plan (1980) and



with BLM planning regulations outlined in 43 Code of Federal Regulations (CFR) 1610.5-5,

## 1.2 PLANNING PROCESS OVERVIEW

The land-use planning and the CDCA plan amendment process in the NEMO Planning Area include nine steps. This process is iterative rather than linear, since information does not reveal itself neatly from one step to the next. The nine steps are:

1. Issue identification - Major issues drive the planning process and indicate concerns that the BLM, other agencies, and the public may have regarding the management of resources in the NEMO Planning Area. An issue is defined as an opportunity, conflict, or problem pertaining to the management of public lands and associated resources. The major planning issues are discussed in more detail in the next section, and are summarized in the plan goals at the end of this chapter. For a list of all issues identified during the public scoping process for the NEMO planning effort and how they are being addressed, refer to Table 5-1.
2. Identification of planning criteria - The BLM planning criteria for this effort were derived from public and agency scoping beginning in the summer of 1995, laws, Executive Orders, regulations, recovery plans, planning principles, BLM guidance and available resource information for the area. They are listed in Appendix L.
3. Inventory and data evaluation - Using the planning criteria, specialists reviewed and evaluated available data, including field examinations, published and unpublished studies, and consultations with individuals and staff from other agencies and organizations. An interagency biological team was formed to evaluate biological data and develop recommendations for desert tortoise and provide input on other threatened and endangered species issues. See the reference list at the end of the document for data sources utilized in the compilation of this document. Some data is also referenced in the Current Management Situation for the desert tortoise.
4. Analysis of the management situation - An analysis of the general management situation summarizes the condition and capabilities of the resources in the Planning Area (see Appendix K). It tiers from information in the CDCA Plan of 1980 and associated technical appendices that were prepared in conjunction with CDCA Plan development. In addition, a Current Desert Tortoise Management Situation (Foreman, 1998) was prepared under separate cover in April 1998. This and other reference documents are available for review at BLM offices in the California Desert District (Ridgecrest, Needles, Barstow or the District Office in Riverside). These analyses provide a basis for consideration of developing and evaluating alternatives and are generally incorporated into the "No Action" Alternative and the affected environment except where indicated.
5. Formulation of alternatives - On the basis of the issues identified for the eight major areas of change to be addressed, planning criteria, and concerns raised during



scoping, a range of alternatives was identified to address the plan goals. Each alternative must adequately address the plan goal and associated issues, while emphasizing different management strategies. The "No Action" Alternative (Alternative 1) is required by the National Environmental Policy Act and may be limited to the extent it can fulfill these requirements. The alternatives are discussed in detail in Chapter 2 of this document.

6. Analysis of the effects of the alternatives - In this document the impacts analysis, located in Chapter Four, is provided by resource or use that may be affected to ease comparison. Site-specific environmental documents will be prepared where follow-up site-specific projects and analyses are proposed that are not included with this document.
7. Selection of the preferred alternative - The California Desert District Manager selected the Preferred Alternative based on the issues and information identified through the planning process; coordination and consultation with other agencies and entities; and the impacts analyses of the alternatives. The Draft Plan Amendments/Environmental Impact Statement (EIS) is now being distributed to the public, including other governmental agencies and interest groups, for a 90-day review and comment period.
8. Selection of the Resource Management Plan - Analyzes public comments, modifies the alternative s as appropriate and serves as a basis for the management plan. The proposed and final EIS is distributed to the public in the final EIS document. A 30-day protest period is allowed before to plan is adopted. A record of decision is published after consideration of all comments or protests.
9. Monitoring and Evaluation - This step involves monitoring and evaluating the resource conditions as the plan is implemented. If monitoring shows that resource issues are not being satisfactorily resolved or that the desired results outlined in the plan are not being met, the plan may be amended or revised.

## **1.3 MAJOR ISSUES**

The following is a discussion of the major issues included in this plan.

### **1.3.1 ADOPTION OF STANDARDS AND GUIDELINES**

The grazing regulations at Part 43 CFR 4180 require that State Directors, in consultation with Resource Advisory Councils, develop Standards of Rangeland Health and Guidelines for Grazing management. The grazing regulations require that the standards be in conformance with the "Fundamentals of Rangeland Health" and that the standards and guidelines address each of the "guiding principles" as defined in the regulations. See Appendix P for a list of these fundamentals and the attributes or guiding principles.



During the development of the grazing regulations it was recognized that the fundamentals of rangeland health and guiding principles for standards address ecological components that are affected by all uses of public rangelands, not just livestock grazing. However, the scope of the grazing regulations and the fundamentals of rangeland health of § 4180.1, and the standards and guidelines to be made effective under § 4180.2, were limited to grazing administration. Application of the principles contained in subpart 4180 to resources and uses of public rangelands other than authorized grazing activities require separate action by BLM or the Department.

By this plan amendment, public land health standards are proposed for all resources and uses on the public lands. Bureau staff, in consultation with the California Desert District Advisory Council, have developed “Standards of Public Land Health” which satisfy both the requirements of the Bureau Strategic Plan and comply with the fundamentals of rangeland health and address each of the guiding principles as required by the grazing regulations. Further they have developed guidelines for grazing management that address each of the guiding principles identified in the grazing regulations. At this time there are no plans to develop guidelines for other activities.

A set of National fallback standards of rangeland health applicable in grazing allotments and guidelines applicable to livestock grazing management was established in 43 CFR 4180.2. They represent the “No Action” Alternative described in Chapter 2. The fallback standards of rangeland health, as written, do not fully address plan goals, since BLM national direction is to address the health of all public lands in the development of standards.

Questions to be addressed in this planning effort include:

- Do the proposed regional standards comply with guidance in the BLM's strategic Plan? (See [www.blm.gov](http://www.blm.gov) and click on Strategic Plan to view 2000 BLM Strategic Plan.)
- Are proposals to address other plan goals consistent with public land health standards that are proposed for adoption under each alternative?
- Will these standards provide an adequate tool for assessing public land health?

### **1.3.2 T&E SPECIES CONSERVATION AND PROTECTION: DESERT TORTOISE**

In 1990 the U. S. Fish and Wildlife Service (USFWS) designated the desert tortoise as a federally-threatened species and in June 1994, published *the Recovery Plan for Desert Tortoise* as required by the Federal Endangered Species Act. The recovery plan established recovery goals and recommended site-specific management actions to achieve the goals. The NEMO Plan proposes alternative habitat and species conservation and recovery strategies on public lands in the NEMO Planning Area in order to achieve recovery of the desert tortoise in the Eastern Mojave Recovery Unit<sup>5</sup>. Issues addressed in

---

<sup>5</sup> The preferred alternative is to propose that USFWS modify recovery unit boundaries so that all of NEMO is part of the Eastern Mojave Recovery Unit. Currently a portion of the Planning Area is in the Northern and Eastern Mojave



the planning effort to accomplish this include habitat disturbance and fragmentation, direct and indirect mortality, potential competitors for forage (i.e., livestock grazing and burros), and long-term habitat degradation.

Alternatives are developed that address a consistent approach for permitted uses where a limited and defined amount of habitat disturbance is involved. In addition, alternatives are developed to ensure that, cumulatively, permitting of uses will not contribute to substantial fragmentation of prime<sup>6</sup> (critical and Category I) desert tortoise habitat. Activities that are not as quantitatively predictable in scope but which may result in large areas of habitat disturbance (e.g., wildfire suppression) are treated specifically. Route designation also is proposed for areas with Category I desert tortoise habitat, within proposed DWMAs, in part to limit habitat disturbance, particularly in desert washes that provide valuable habitat components.

Direct and indirect mortality are addressed through proposals to fence freeways and other major roads. In addition, control of other sources of direct mortality from routes is addressed within prime desert tortoise habitat, including through management of numbers of routes and speed limits on those routes as noted previously. Alternatives also are developed to address mortality caused by raven predation on desert tortoises.

Since there is overlap in what desert tortoises and cattle eat and a limited amount of forage available on public lands during certain seasons and dry years, management of forage used by livestock is considered essential to long-term recovery of the desert tortoise. Desert tortoise are considered substantially more susceptible to mortality from stresses, such as disease, drought, low nutritional intake, and air pollution, when such stresses are compounded. Livestock management currently includes limitations on forage use of key perennial species, seasonal use and drought limitations, and strategies to manage range improvements (e.g., range waters) to minimize conflicts with desert tortoise.

Burro conflicts and management strategies are similar in some respects to those for livestock because they are in large part forage-based. However, the scope of the issue is limited primarily to the area north of I-15 where the overlap with prime desert tortoise habitat occurs (i.e., the Clark Mountain Herd Management Area). Burros have few natural predators in the NEMO Planning Area, and population numbers and their Herd Management Areas (HMA) have to be regularly monitored to ensure they are trending downward toward the Appropriate Management Level (AML).

Alternatives address the numbers, locations, levels and seasons of use for both livestock and burros to minimize conflicts with desert tortoise. With the designation of the Mojave National Preserve and the National Park Service policy of burro removal, the

---

Recovery Unit, but it forms a cohesive unit with the rest of the Eastern Mojave Desert tortoise habitat. Strategies for the Northern and Eastern Mojave Recovery Unit are focused firstly in areas northeast of Las Vegas, and secondarily, in an area north of Nipton Road in an area of Nevada that is not adjacent to the State line.

<sup>6</sup> The only Category II habitat in the NEMO planning area is in the Mojave National Preserve, which is addressed in a separate National Park Service planning effort covering the Preserve.



development of a viable drift management strategy is also a consideration in alternative development and evaluation in desert tortoise habitat.

Long-term habitat degradation can occur when productive plant communities change on a landscape scale due to spreading non-native species that replace native species, especially perennials. Several factors contribute to the spreading of non-native species, including cattle and burro grazing, wildfire and non-native seed dissemination along regularly disturbed areas such as routes. All of these issues are addressed in alternatives. The issue of landscape scale is also addressed through alternatives that propose a cumulative approach to habitat disturbances.

Questions to be addressed in this planning effort include:

- What level of habitat disturbance can be tolerated in prime (Category I) desert tortoise habitat that ensures habitat fragmentation and disturbances are not excessive and provides for some level of uses to occur? When disturbances do occur, what strategies can be pursued to assure lands are rehabilitated to suitable habitat?
- What fencing strategy should be adopted to minimize desert tortoise mortality on major roads that pass through prime tortoise habitat?
- What strategy should be adopted to address hatchling and juvenile tortoise predation by ravens?
- What route designation choices are appropriate in the highest value tortoise habitat? If the Bureau finds areas where overall route density is not optimal, which routes should be kept open and which routes should be closed and rehabilitated? Which washes should the Bureau designate as open, closed or limited in Category I habitat?
- Where, in relation to existing routes should vehicles be allowed to park and camp within Category I habitat?
- What strategies are most appropriate for livestock grazing management within Category I and within other desert tortoise habitat to minimize conflicts? Likewise, what strategy should we pursue for burro management in Category I and other desert tortoise habitat north of I-15 to minimize conflicts?
- What strategies should we adopt to minimize the spread of non-native plants in Category I desert tortoise habitat?
- What land tenure strategy should be pursued in Category I desert tortoise habitat?

### **1.3.3 T&E SPECIES CONSERVATION AND PROTECTION: AMARGOSA VOLE**

In 1984, one year following completion of the BLM's Amargosa Canyon and Grimshaw Lake Natural Area ACEC Management Plans, critical habitat was designated for the State and federally endangered Amargosa vole. ACEC management planning provided a limited conservation strategy for the Amargosa vole, as species distribution was not well known. Designated critical habitat for the Amargosa vole includes an area of public land



managed by BLM located between and linking the aforementioned natural area ACECs. The USFWS finalized the recovery plan for this species in 1998.

This document proposes alternative habitat and species conservation and recovery strategies on public lands in the NEMO Planning Area, in order to conserve and move towards recovery of the Amargosa vole. Major issues identified in the planning effort to be addressed in ACEC planning include loss of riparian and wetland habitat, disturbance and fragmentation of habitat, fragility of vole population and genetic dynamics, potential conflicts and vole response to other uses, and flooding in the riparian corridor. Also, during analysis of the riparian corridor in this planning effort, three reaches of the Amargosa River were identified as eligible for Wild and Scenic Rivers suitability determinations (See Appendix O). Questions to be addressed in this planning effort include:

- What area should be identified for protection of Amargosa vole, related riparian, and watershed values to safeguard T&E and sensitive species populations, given the private lands and uses around Tecopa Hot Springs and the town of Shoshone?
- What land tenure strategy should be pursued in critical habitat and other riparian lands to provide additional habitat for the endangered vole and other sensitive species?
- What strategies should be pursued to continue and expand native riparian vegetation rehabilitation within the Amargosa watershed?
- What actions should be considered to address major issues during ACEC management planning?
- What restrictions on water uses and protective measures for water quality and quantity should be pursued within Amargosa vole habitat and the surrounding riparian corridor?

#### **1.3.4 T&E SPECIES CONSERVATION AND PROTECTION: CARSON SLOUGH PLANTS**

Two federally-listed plants, the endangered Amargosa niterwort and the threatened Ash Meadows gumplant, as well as the BLM-designated sensitive Tecopa birdsbeak are found in the lower Carson Slough drainage of the Amargosa River and the adjacent Franklin Lake Playa. Critical habitat has been designated in an area called Carson Slough for the first two federally-listed plants. These two critical habitat units are separated by a 1.2 mile-wide stretch of public lands. Portions of both units, and the area between these units, are suspected to support the spring-loving centaury, a federally-listed species, as well.

This tributary and its upstream source waters in Ash Meadows National Wildlife Refuge are the source waters for the Central Amargosa region, addressed in the previous proposal for Amargosa vole recovery. The southern, downstream half of these critical habitat units, located on the northern portion of Franklin Lake Playa, has long been recognized as a unique plant community and is BLM-designated as the Salt And Brackish Water Marsh Unusual Plant Assemblage (UPA) in the CDCA Plan.



The current planning document proposes alternative species and riparian habitat conservation strategies on public lands in the NEMO Planning Area in order to protect listed plant species. Questions to be addressed in this planning effort include:

- What areas should be identified for protection of listed plant species, related riparian, and watershed values to safeguard T&E and sensitive species populations, given the historic and recent uses around Carson Slough?
- What strategies should be pursued to help ensure a continuing riparian flow, vegetation, and soil substrate necessary for T&E plants to survive and thrive?
- What actions should be taken to address trampling and grazing of T&E plants by wild horses?
- What mechanisms can be identified to address damage to T&E plants from surface disturbing activities, including those associated with route proliferation during exploratory mining activities?

### **1.3.5 T&E SPECIES CONSERVATION AND PROTECTION: SILURIAN HILLS BATS**

Eight bat species are known to occur in the Planning Area and have been designated as BLM-California sensitive. These bat species use the Amargosa River and Kingston Wash watersheds and particularly habitat on the north and west facing slopes of the Kingston Mountains, within the Hollow Hills and Silurian Hills. Cliff faces and crevice slopes, both commonly used natural roosts for many bat species, are abundant in the Silurian Hills. Mine shafts and adits are also quite numerous in the Silurian Hills, and at least five bat species are known to utilize these shafts and adits as roosting, hibernation and maternity sites. Alternative strategies to better protect sensitive bat species and habitat in this area, particularly during times when roosting and reproduction is occurring, are presented in this document.

Issues to be addressed in the planning effort include direct and indirect mortality, protection of new habitat and loss or disturbance of existing habitat, and potential conflicts and bat response to other uses. The main threats to bats and their habitats include:

- vehicle route proliferation and associated resource impacts in the vicinity of suitable bat roost sites (rock crevices, cliffs, mines) and foraging areas (sand dunes, washes, springs, playas, etc.).
- disturbance of rock crevice and cliff habitats resulting from other uses, particularly by mining;
- human visitation of mine shafts and adits; and
- dumping of trash and contaminants, and the burning materials, in mine shafts;
- camping adjacent to bat habitat.

Questions to be addressed in this planning effort include:

- What land use management tools will provide adequate protection for maternity,



hibernation and day roosts?

- Does a case-by-case or programmatic approach make more sense to address potentially conflicting uses and bat management in this area?

### **1.3.6 CDCA PLAN CHANGES RESULTING FROM THE CALIFORNIA DESERT PROTECTION ACT: RELEASED LANDS**

On October 31, 1994 Congress passed the California Desert Protection Act (CDPA) affecting millions of acres of public lands in the California Desert. Specifically, in the NEMO Planning Area the CDPA:

- Created the Mojave National Preserve as a new unit of the National Park System and designated 50% of its lands as wilderness;
- Expanded Death Valley National Monument, and converted the monument into a national park and designated 95% of its lands as wilderness;
- Designated 1.2 million acres of BLM wilderness and released some public lands (approximately 475,000 acres) from wilderness consideration that were not designated wilderness.

The passage of the CDPA has necessitated changes in the CDCA Plan to bring it into compliance with the Act. The CDCA Plan maintenance actions are not discretionary (although they may have triggered related, discretionary, proposals) and are listed in Appendix M.

Released wilderness study areas include two categories of lands<sup>7</sup>. In the first category, are public lands that were released WSAs and recommended as non-suitable by the BLM. According to the CDCA Plan (p.54), these lands return to their original multiple-use class (MUC) designation (No Action). The second category are lands recommended as suitable by BLM, and which Congress chose not to designate as wilderness and chose to release from further wilderness consideration. In this second instance, the range of alternatives on BLM-managed public lands also tiers from the strategy proposed in the CDCA Plan (p. 55 of the CDCA Plan as amended by the 1982 Plan Amendments Record of Decision, p, 121). These lands were managed as MUC C during wilderness consideration, but can no longer be managed under that designation, by definition. The CDCA Plan strategy indicates recommended WSAs have an interim MUC Limited designation (No Action), and secondly that permanent MUC designation shall be determined through the land use planning process.

---

<sup>7</sup> There may also be remnant parcels that show up due to Congressional boundary adjustments which are relatively small or long, linear slivers. This would occur for example, where WSA boundaries are pulled back 100 feet from a roadway along a mile-long length of road, or where Congress made a small boundary adjustment to a geographical or other feature which resulted in released lands. In those cases where small acreages or long slivers of public lands are released to the BLM for redesignation of their MUC, the redesignation is being addressed as a plan maintenance action under 2.3.4. Lands would be redesignated consistent with surrounding MUC that is not wilderness or WSA.



The NEMO planning process will determine permanent MUCs for all of these released lands. Considerations include resource sensitivity, surrounding MUC, and other activities including those that Congress may have noted in their rejection of the wilderness designations. The questions identified to be addressed on these lands are:

- Have any of the lands undergone a significant change in circumstance since the last plan amendment process was completed for this Planning Area, such that they should be considered for a MUC other than the MUC originally designated in the CDCA Plan?
- On each released parcel, what are the site-specific factors (CDPA, proposed desert tortoise zoning, ACECs, OHV open areas, changes to surrounding MUC) the BLM should weigh in its consideration of appropriate MUC?
- Should the lands not recommended as wilderness (where MUC of adjacent lands had been changed by previous CDCA plan amendment) be considered for a MUC other than the MUC originally designated in the CDCA Plan?
- Should any of the lands recommended as wilderness be designated as a MUC other than MUC Limited, which is the interim designation in the CDCA Plan?

### **1.3.7 CDCA PLAN CHANGES RESULTING FROM THE CALIFORNIA DESERT PROTECTION ACT: ACECS CONSIDERED FOR DELETION**

Five Areas of Critical Environmental Concern (ACECs) were affected by the expansion of the National Park Service jurisdiction in the NEMO planning area (Cerro-Gordo, Clark Mountain, Greenwater Canyon, Saline Valley, and Surprise Canyon). Area of Critical Environmental Concern (ACEC) is a BLM management tool that is not utilized by the National Park Service. Therefore, a preliminary evaluation of these ACECs was conducted to determine whether remaining lands administered by the BLM warrant ACEC status. Four of the ACECs contain a substantial number of the values for which they were originally designated. The fifth is the Greenwater Canyon Cultural ACEC, which is considered further in this planning effort, in terms of whether it has sufficient sensitive values on BLM-administered lands to meet ACEC importance and relevance criteria.

Approximately 73 percent of the Greenwater Canyon Cultural ACEC, originally comprising approximately 3,000 acres of public lands, is no longer under the jurisdiction of the BLM as a result of the expansion of Death Valley National Park. Most of the important cultural values are now located within the boundaries of DVNP. The question to be addressed in this planning effort is:

- Should the remaining 820 acres of public lands remain an ACEC?

### **1.3.8 ORGANIZED COMPETITIVE VEHICLE EVENTS**

The Barstow-to-Vegas (B-to-V) Motorcycle Racecourse was established by a 1982 Plan Amendment to the CDCA Plan on 17 May 1983. The B-to-V course is approximately



250 miles in length and crosses the West Mojave Desert, Mojave National Preserve (approximately 23.4 miles) and the NEMO Planning Area (34.6 miles), then crosses into Nevada through the lands managed by the BLM Las Vegas Field Office. Within California, approximately 65 percent of the course is located in prime (critical and Category I) desert tortoise habitat, whereas through Nevada it crosses outside of the areas designated as tortoise ACECs by the BLM's Las Vegas Resource Management Plan. In the NEMO Planning Area, almost 90 percent of the course passes through prime desert tortoise habitat. In addition, lands that were identified as part of the course are now under the jurisdiction of the NPS. The above major changes to land-use allocation and resource sensitivity have occurred since 1982 when the CDCA Plan was amended to permit the Thanksgiving weekend point-to-point motorcycle race.

A related issue is the existing special criteria in the Recreation Element of the CDCA Plan for organized long distance point-to-point competitive vehicle events. Currently, outside of OHV open areas and identified race courses, an organized competitive event may be proposed in MUC I and M, and in MUC L consistent with identified criteria. However, most of the issues identified for MUC L are driven by legal mandates that are also applicable on other public lands. No organized, competitive race is likely to be permitted under the existing criteria in the NEMO planning area given wilderness and wilderness study area designations, existence of designated T & E species and their habitat, presence of significant cultural/historic resources and other considerations. Therefore, the BLM needs to determine an appropriate strategy for competitive, organized speed events desert-wide. Desert-wide strategies are also being considered in adjacent planning areas to the west (West Mojave) and south (Northern and Eastern Colorado). The questions to be addressed in the NEMO planning effort are:

- Should the B-to-V point-to-point racecourse be modified or eliminated, based on the changes to land-use allocation and resource sensitivity that have occurred since the course's designation in 1982?
- What desert-wide strategy for Organized Competitive Vehicle Events makes sense in the NEMO planning area for the next twenty years?
- Should desert-wide criteria be developed for organized competitive races outside of OHV open areas in the California Desert?

### **1.3.9 MOTORIZED ROUTES OF TRAVEL DESIGNATIONS**

By BLM policy, all routes of travel designations (motorized) are now made as land-use planning decisions. In the California Desert, motorized vehicle access and other land uses enjoy a close relationship. Motorized travel is most often the focus of recreational activities (e.g., driving for pleasure or in pursuit of specific recreational hobbies, participating in dual-sport motorcycle events, or racing in organized events), or a means of getting to recreation sites such as campgrounds and trailheads. Routes of travel designations also directly affect access, and thus opportunities, for nonrecreational pursuits such as mining exploration, conduct of ranching operations and other land uses authorized on public lands, and indirectly, development of adjacent private lands.



Prior to the approval of the CDCA Plan, as amended, BLM managed access, recreation, and vehicle use under the Interim Critical Management Program (ICMP) and guidelines set forth in Executive Orders 11644 (Use of Off-road Vehicles on Public Lands, Nixon, 1972) and 11989 (Off-road Vehicles on Public Lands, Carter 1977). The ICMP and the CDCA Plan provided interim designations of routes within the boundaries of the CDCA and noted that these designations would be in effect until anticipated implementation of updates could occur (1982 CDCA Plan Amendment ROD, p. 20. The CDCA Plan was amended in 1982 to ensure that the rules in the Code of Federal Regulations (CFR) would be followed during route designation efforts.

The guidance in 43 CFR 8342.1 requires that all designations pertaining to off-road vehicle use be based on:

- the protection of the resources of the public lands,
- the promotion of the safety of all the users of the public lands, and
- the minimization of conflicts among various uses of the public lands.

Within this framework, three goals for routes of travel designation were identified in the CDCA Plan's Motor-Vehicle Access Element, as amended in 1985. These include to:

- provide for constrained motorized vehicle access in a manner that balances the needs of all desert uses, private landowners, and other public agencies;
- when designating or amending areas of routes for motorized vehicle access, to the degree possible, avoid adverse impacts to desert resources;
- use maps, signs and published information to communicate the motorized vehicle access situation to desert users. Be sure all information materials are understandable and easy to follow.

The CDCA Plan required designation of areas and specific routes. Subsequent to designation of "closed", "limited" or "open" areas for motorized-vehicle use, the CDCA Plan required on-the-ground route designation of routes of travel occur within areas designated "limited" for motorized-vehicle use. Within Multiple-Use Class (MUC) "L" (Limited) a route network comprised of specific "approved" routes would be identified, while a route network comprised of existing routes of travel could be utilized in Multiple-Use Classes "I" (Intensive), "M" (Moderate), and "C" (Controlled). "Existing routes of travel" were defined as routes existing before December 31, 1978 (the date of full aerial photo coverage of the CDCA).

In the NEMO planning area, approximately 40% of the area has been designated as wilderness. An additional 10% has been designated or remains in wilderness study area status, which awaits Congressional decision on wilderness suitability. Approximately 50%, or 1.2 million acres, is designated as "limited" for motor-vehicle access and needs site-specific analysis to designate a route network. In the NEMO planning area, route designation for approximately 30 percent of the route network will be completed with this planning effort. The questions to be addressed in the NEMO planning effort include:



- What strategy should the BLM utilize to complete route designation in the rest of the NEMO planning area?
- Is the existing route designation strategy adequate to identify and classify a valid route network?

### **1.3.10 INYO COUNTY LANDFILLS**

In 1993 and 1994, the Department of the Interior implemented new policies which require the BLM to either convey out of Federal ownership by patent or close existing landfills operating on public lands. In 1995, the CDCA Plan was amended to reflect this policy by not allowing new landfills on public lands. "Closure" is a technical process that can take many years and involves the oversight of State regulatory agencies. Patenting is the preferred approach of most operators (Counties). Issuance of patents (transfer of ownership) is required prior to any expansion of current landfilling activities. The question to be addressed in this planning effort is:

- Should the MUC be changed on lands being used as landfills to make them available for conveyance to the County of Inyo?

### **1.3.11 WILD AND SCENIC RIVERS ELIGIBILITY: IDENTIFICATION AND CLASSIFICATION**

The BLM has been mandated to evaluate potential additions to the National Wild and Scenic River System (NWSRS) per Section 5(d) of the Wild and Scenic Rivers Act of 1968 (16 United States Code 1271-1287, *et seq.*). Title 43 CFR, Subpart 8350, specifically addresses designation of management areas. NWSRS study guidelines have also been published in Federal Register Volume 7, Number 173 (September 7, 1982), for public lands managed by the U.S. Departments of Agriculture and Interior. Additional guidance on wild and scenic rivers is provided in BLM Manual 8351.

During analysis of the Amargosa vole amendment, the Amargosa River was identified as potentially eligible for Wild and Scenic River designation. Two other rivers, Cottonwood Creek and Surprise Canyon in the northern portion of the NEMO Planning Area were also identified with Outstandingly Remarkable Scenic Values. The question to be addressed in this planning effort is:

- What segments of the Amargosa River, Cottonwood Creek, and Surprise Canyon meet eligibility criteria for Wild and Scenic Rivers designation and what potential classification should be identified for potentially eligible segments?

The eligibility reports are submitted as Appendix O for the Amargosa River segments, Appendix S for the Cottonwood Creek segment, and Appendix T for the Surprise Canyon segments.



## 1.4 RELATIONSHIP TO LAWS, REGULATIONS AND POLICIES

The proposed action and alternatives are consistent with applicable Federal statutes and regulations, including;

- the Federal Land Policy and Management Act (FLPMA),
- the National Environmental Policy Act,
- the Federal and California Endangered Species Acts,
- the Sikes Act,
- the Taylor Grazing Act,
- the Wild, Free-Roaming Horse and Burro Act,
- the National Historic Preservation Act,
- the Clean Water Act, the Clean Air Act,
- the Wilderness Act,
- the California Desert Protection Act,
- Mining and Minerals Policy Act of 1970,
- 1872 Mining Law, National Materials and Minerals Policy,
- Research and Development Act of 1980,
- Executive Orders and Congressional mandates.

In addition, the desert tortoise proposed action and alternatives tier off of two additional policy documents: *Desert Tortoise Habitat Management on Public Lands: A Rangeland Plan* and *California's Statewide Desert Tortoise Management Policy*.

## 1.5 FRAMEWORK OF THE CDCA PLAN, 1980

For lands under the jurisdiction of the BLM, existing land use planning guidance for the area is found in the CDCA Plan of 1980, as amended. The plan alternatives would amend the approved CDCA Plan for the NEMO planning area. Existing activity plans in the planning area would not be directly affected, except for the areas identified herein.

The framework of the CDCA Plan is based on land-use management by geographic zones, i.e. the types of uses that are appropriate for various areas of the California Desert in light of existing resource values. The Plan provides overall direction through four multiple-use classes (MUCs): Controlled Use (C) for wilderness areas, Limited Use (L), Moderate Use (M), and Intensive Use (I). See the CDCA Plan, as amended, 1980, pp. 15-20 for a complete list of MUC guidelines for each resource and use. Management direction is given for various resource values and uses such as utility corridors, domestic livestock grazing, and threatened and endangered species conservation through the goals for each of these elements of the Plan. Special areas are identified for conservation and protection of important values, and appropriate management direction identified to be further developed into site-specific conservation actions for these areas. Chief among these are Wildlife Habitat Management Areas and Areas of Critical Environmental Concern (ACECs).



No alternatives address the management of areas outside of the planning area, except that standards for public lands, grazing management guidelines, and organized competitive vehicle event decisions can not be adopted and implemented until also evaluated in other planning areas within the CDCA.

## **1.6 RELATIONSHIP TO OTHER PLANS**

### **Plan Coordination**

Several issues in this planning effort are being simultaneously addressed in adjacent planning efforts including the BLM-led West Mojave Plan, Northern and Eastern Colorado Plan, recently completed Las Vegas Resource Management Plan as well as the Mojave National Preserve and Death Valley National Park General Management Plans. Therefore there is a need for consistency on issues which are common and particularly sensitive to two or more plans. However, many of these issues and solutions will be planning-area specific. NEMO decisions, which may be deferred to assure desert-wide consistency, include the following:

- adoption of standards and guidelines;
- adoption of a strategy for OHV competitive events outside of open areas;
- a decision on the future of the Barstow-to-Vegas race course;

A record of decision on these issues may be deferred until comment has been received from participants and publics interested in other bioregional plans currently underway in the CDCA and other appropriate public involvement has occurred.

This NEMO Planning Effort has been developed in response to USFWS recovery plans for the federally and State listed desert tortoise and Amargosa vole. The relationship of specific strategies identified in this planning effort and recommendations in those recovery plans are indicated in specified appendices (Appendix A for desert tortoise, Appendix H for Amargosa vole). The NEMO Planning Effort adopted the goals of both recovery plans, and the recovery objectives for the Amargosa vole. For desert tortoise, this planning effort as in other planning efforts within the four-state range of the listed desert tortoise, has developed strategies that vary in some respects from the recommended actions in the recovery plan. These differences are based on identifying recovery-unit and DWMA-specific alternatives to meet the goals of the USFWS recovery plan. For a discussion of how the recovery plan recommends addressing potential threats to the desert tortoise and its habitat, and how the preferred alternative addresses these issues in the NEMO Planning Area, see Appendix C.

The NEMO Planning Area was one of three planning areas that were established in the desert region of southern California to address desert tortoise issues. A fourth area was identified for the same purpose in southern Nevada. The initial objectives of these planning efforts were to gather information, define issues, and develop methods to resolve issues. Due to the complexity of preparing and completing an Environmental Impact Statement or EIS, on four geographically different and complex land areas, it was



determined that a separate EIS be prepared for each planning effort. The four plans to be developed were: the Las Vegas Resource Management Plan, or LVRMP for the northeastern and eastern Mojave Planning Effort in Nevada<sup>8</sup>; the West Mojave Plan, or WEMO, for the western Mojave Desert; the Northern and Eastern Colorado Planning Effort, or NECO, in the northern and eastern Colorado Desert; and this planning effort, the Northern and Eastern Mojave Planning Effort, or NEMO, for the northeastern and eastern Mojave Desert in California. A brief description of each of the other planning efforts follows.

### **Northern and Eastern Colorado Plan**

Led by the Bureau of Land Management, Federal and State agencies are cooperatively developing this CDCA plan amendment to address recovery of the desert tortoise and management of additional special status species and natural communities in the northern and eastern Colorado Desert. The planning area is twice the size of NEMO, and is adjacent to NEMO, south of I-40. NEMO and NECO share adjoining boundaries of extensive desert tortoise habitat across I-40. NECO's habitat is in two other desert tortoise recovery units.

### **West Mojave Plan**

Led by the Bureau of Land Management, Federal, State and local agencies are cooperatively developing this CDCA plan amendment for public lands and habitat conservation plan (HCP) on private lands to address recovery of the desert tortoise and management of a number of other species in the western Mojave Desert. The Planning Area is about four times the size of NEMO and abuts NEMO on most of the western boundary of the planning area.

### **Las Vegas Resource Management Plan**

Led by the Bureau of Land Management, this land use plan addressed all resource uses on public lands, but emphasizes recovery of the desert tortoise in the northern and eastern Mojave Desert in Nevada. Thus, the LVRMP and NEMO share portions of both recovery units that are the focus for their recovery strategies. The LVRMP Planning Area is about 40% larger than NEMO, and abuts NEMO on the southeastern boundary of the Planning Area. The Record of Decision was released in October, 1998, indicating the LVRMP decisions. As subsequently amended, these decisions would be consistent with NEMO proposals for desert tortoise in the eastern Mojave Desert.

### **Death Valley National Park General Management Plan**

In August 1999, the National Park Service released a Draft Environmental Impact Statement for a proposed update to the existing General Management Plan and alternatives covering the expanded 3.4 million-acre Death Valley National Park. The Death Valley National Park is located in the transition between the East Mojave and the

---

<sup>8</sup> The DEIS for this plan was published as the Stateline Resource Management Plan.



Basin and Ranges Province and is adjacent to the northern third of the NEMO planning effort. Issues included wilderness, Timbisha Indian lands, burro management, and management of natural hot springs. A revised Draft EIS is expected in the late summer or early fall of 2000.

### **Mojave National Preserve General Management Plan**

In September 1999, the National Park Service released a Draft Environmental Impact Statement for a proposed General Management Plan and alternatives covering the 1.6 million-acre Mojave National Preserve. The Mojave National Preserve is located in the East Mojave and is adjacent to and west of the southern third of the NEMO planning effort. Issues included conservation of the East Mojave and the Northern and Eastern Mojave populations of desert tortoise, grazing management, route management, and facilities. A revised Draft EIS is expected in the late summer or early fall of 2000.

## **1.7 PLAN GOALS**

In summary, the plan goals are to address the purposes and needs identified at the outset of this chapter. They include the following:

1. Adopt standards for public land health and guidelines for grazing management in the Planning Area;
2. Identify management actions to conserve and recover threatened and endangered (T&E) species, particularly the desert tortoise, Amargosa vole, three listed riparian obligate birds and three listed plants, as well as species that may be considered for listing in the reasonably foreseeable future;
3. Make Multiple-use Class (MUC) decisions for lands released from wilderness consideration and make changes required to make the CDCA Plan conform to the California Desert Protection Act (CDPA);
4. Adopt a off-highway vehicle (OHV) strategy for motorized competitive speed events;
5. Adopt a strategy for route designation in the NEMO Planning Area consistent with 43 CFR 8342.1.
6. Change the Multiple-Use Class to enable disposal of existing landfills on public lands in the Planning Area; and
7. Identify potentially eligible river segments on public lands for inclusion in the National Wild and Scenic Rivers System.

Alternatives have been formulated in the next chapter to address each of these plan goals.



## 2.0 PROPOSED ACTIONS AND ALTERNATIVES

**This page intentionally left blank**







## 2.0 PROPOSED ACTIONS AND ALTERNATIVES

This chapter identifies a range of alternatives to address the purpose and need statements described in Chapter One. A summary list of the major issues is given in Table 2-1.

**Table 2-1: Summary List Of Major Issues**

Issue	Section	How Issue Is Addressed In This Plan
<b>A. Public land health</b>	<b>2.1</b>	Adopt standards for public land health and guidelines for grazing management
<b>B. Threatened &amp; Endangered and special status species protection:</b> Desert tortoise	<b>2.2</b>	Establish Desert Tortoise Wildlife Management Areas and adopt management strategies within DWMA boundaries: <ul style="list-style-type: none"> <li>• Designate Areas of Critical Environmental Concern on all public lands within DWMA's;</li> <li>• Assign MUC L to all public lands within DWMA's;</li> <li>• Change desert tortoise habitat to all CAT I inside and all CAT III outside of DWMA's.</li> <li>• Change grazing management to recover the desert tortoise.</li> <li>• Change burro management to recover the desert tortoise.</li> </ul>
<b>Amargosa vole</b>	<b>2.3</b>	Designate an ACEC and adopt management strategies to facilitate recovery of the Amargosa vole and enhance other Amargosa watershed values.
<b>T&amp;E plants</b>	<b>2.4</b>	Establish the Carson Slough ACEC and adopt management strategies to recover T&E plants.
<b>Bats</b>	<b>2.5</b>	Modify the MUC of the Silurian Hills to conserve BLM-sensitive bats.
<b>C. Issues resulting from the California Desert Protection Act</b>	<b>2.6</b>	Complete Plan maintenance actions to conform the CDCA Plan to the California Desert Protection Act
	<b>2.7</b>	Establish MUC for 475,000 acres of released WSA
	<b>2.8</b>	Evaluate the remnant Greenwater Canyon ACEC (820 acres)
<b>D. Organized Competitive Vehicle Events</b>	<b>2.9</b>	Address organized competitive vehicle events outside of open areas to protect sensitive resources and address fragmented race course: <ul style="list-style-type: none"> <li>• Delete or modify the Barstow to Las Vegas Race Course; and/or</li> <li>• <u>Modify organized competitive vehicle speed events criteria.</u></li> </ul>
<b>E. Motor Vehicle Access: Routes of Travel Designation</b>	<b>2.10</b>	Address routes of travel designation for the NEMO Planning Area: <ul style="list-style-type: none"> <li>• Designate routes of travel in desert tortoise DWMA's</li> <li>• Identify priorities for route designation in the rest of the Planning Area.</li> <li>• Evaluate MUC Guidelines for consistency in determining routes to be included in the routes of travel network.</li> </ul>
<b>E. Bureau policy on elimination of landfills on public lands</b>	<b>2.11</b>	Change the Tecopa Landfill MUC L to U making it available for disposal.
		Change the Shoshone Landfill MUC L to U making it available for disposal.
<b>F. Wild and Scenic Rivers</b>	<b>2.12</b>	Identify portions of the Amargosa River, Cottonwood Creek and Surprise Canyon as eligible for potential inclusion in the National Wild and Scenic Rivers System and determine classification of eligible segments.



## 2.1 STANDARDS AND GUIDELINES

BLM's grazing regulations at Part 43 CFR 4180 require that State Directors, in consultation with Resource Advisory Councils, develop Standards of Rangeland Health and Guidelines for Grazing management. The grazing regulations require that Standards be in conformance with the "Fundamentals of Rangeland Health" (BLM policy developed in 1993) and that the Standards and Guidelines address each of the "guiding principles" as defined in the regulations (see Appendix B). Standards and Guidelines are to be incorporated into BLM's land use plans to improve ecological conditions. Improving ecological conditions is based upon attainment and maintenance of basic fundamentals for healthy systems. Standards and Guidelines are defined as follows:

- A Standard is an expression of the levels of physical and biological condition or degree of function required for healthy, sustainable rangelands.
- Guidelines for grazing management are the types of grazing management methods and practices determined to be appropriate to ensure that the standards can be met or that significant progress can be made toward meeting the standard.

### Plan Alternatives and Scope

By this plan amendment public land health Standards will be developed and applied to resources and uses on the public (BLM) lands and grazing management guidelines will be developed and applied to grazing leases. The policy includes a set of "National Fallback" Standards and guidelines which apply only to livestock grazing in the Current Management/No Action Alternative. For all other alternatives common sets of "regional" Standards and guidelines have been developed. Regional Standards apply to all BLM lands and programs, while regional guidelines still only apply to livestock grazing. Bureau staff, in consultation with the California Desert District Advisory Council, have developed the regional Standards and guidelines which action satisfies the requirements of BLM's strategic plan, complies with the fundamentals of rangeland health, and addresses each of the guiding principles as required by the grazing regulations. Their development of guidelines for grazing management also addresses each of the guiding principles as well. At this time there are no plans to develop guidelines for other activities.

The purpose and nature of this policy is similar to the "Vital Signs" program established for the National Park Service. While the definition and adoption of Standards and Guidelines applies specifically and only to BLM lands, the spirit of the policy is reflected throughout the planning area in developing the strategic approach to managing species and habitats.

### Required Actions on Grazing Leases

Standards and grazing management guidelines apply to grazing related portions of activity plans, terms and conditions of permits, leases, and other authorizations, and range



improvement activities such as vegetation manipulation, fence construction and development of water. For lands leased for grazing uses the grazing regulations require the authorized officer to “take appropriate action” prior to the beginning of the next grazing season when Standards are not achieved or guidelines not complied with and livestock grazing has been determined to be a significant factor in the failure to achieve the standard or comply with the guideline.

### **Application of Standards in Land Use Planning**

Standards of Public Land Health will be applied to all resources and uses of the public lands. Both sets of standards would be applied in the following manner:

- **Public Land Health Standards:** A single set of public land health Standards will be applied desert-wide and to all resources and uses. Standards have their foundation in the physical and biological laws of nature. These laws are consistent regardless of the resource or use.
- **Assessment of Public Land Health:** The health of public lands and resources will be assessed using the Standards as the measurement of desired function.
- **Assessment Scale:** The health of the public lands will be assessed on a landscape /watershed scale. While it may be useful and necessary to examine certain environmental component parts on a smaller scale, or at various scales, it is intended that there be just one measure or conclusion of overall public land health and that this conclusion be made at a landscape or watershed scale.
- **Health Determination:** Since standards are a statement of the goals for physical or biological function, these determinations will be based strictly on the results of resource assessments and independent of the uses on the public lands.
- **Resource Objectives:** Resource management objectives are decisions made in consideration of resource values and capabilities and use needs through land use and activity plans. Public land health determinations will be used to determine if resource management objectives are being met. In some cases, particularly where intensive land uses are allowed, resource management objectives could be met, while the public land health determination may indicate non-conformance with the Standards.
- **Casual Factors:** When public land health determinations indicate that resource management objectives are not being met, a determination will be made as to the casual factors.
- **Action/Adaptive Management:** Where resource conditions and functions are not conforming to resource management objectives, appropriate action – including changes to land use or activity plans – will be initiated using existing regulatory authorities for each authorized activity. In the case of livestock grazing the regulations require that the authorized Officer “take appropriate action” prior to the beginning of the next grazing season when standards are not achieved or guidelines not complied with and livestock grazing has been determined to be a significant factor in the failure to achieve the standard or comply with the guideline.



- **Monitoring/ Adaptive Management:** An assessment of public land health will define what is wrong and where. This knowledge in turn will help define not only management change but an important component of a monitoring program: the tracking of progress towards health improvement.

### **Application of Standards in NEPA Analyses**

Analyses of resources and issues guided by standards will help NEPA<sup>1</sup> review of projects. Consideration of standards should improve identification and analyses of:

- Relevant resource conditions and ecosystem functions;
- Actions in terms of effects on resources and ecosystem functions;
- The relationship of biological and physical resources and functions;
- The most important resources and functions;
- Project design and mitigation;
- Cumulative effects;
- Short-term and long-term effects; and
- Project monitoring

## **2.1.1 ALTERNATIVE 1 (NO ACTION)**

### **2.1.1.1 Standards of Rangeland Health in the NEMO Planning Area**

Continue to utilize existing National Fallback Standards for grazing allotments. Fallback standards were developed to implement 43 CFR, Subpart 4180 grazing regulations. The fallback standards for rangeland health are:

1. Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, and landform.
2. Riparian-wetland areas are in proper functioning condition.
3. Stream-channel morphology (including but not limited to gradient, width/depth ratio, channel roughness, and sinuosity) and functions are appropriate for the climate and landform.
4. Healthy, productive and diverse populations of native species exist and are maintained.

### **2.1.1.2 Rangeland Guidelines For Grazing Uses In The NEMO Planning Area:**

Utilize existing national fallback guidelines for grazing management. Fallback guidelines were developed in conjunction with standards to implement 43 CFR Subpart 4180. Guidelines identify 15 grazing management practices to achieve the fallback standards.

---

<sup>1</sup> National Environmental Policy Act of 1972.



1. Management practices maintain or promote adequate amounts of ground cover to support infiltration, maintain soil moisture, and stabilize soils.
2. Management practices maintain or promote soil conditions that support permeability rates that are appropriate to climate and soils.
3. Management practices maintain or promote sufficient residual vegetation to maintain, improve, or restore riparian-wetland functions of energy dissipation, sediment capture, groundwater recharge and stream bank stability.
4. Management practices maintain or promote stream channel morphology (e.g., gradient, width/depth ratio, channel roughness and sinuosity) and functions that are appropriate to climate and landform.
5. Management practices maintain or promote the appropriate kinds and amounts of soil organisms, plants and animals to support the hydrologic cycle, nutrient cycle, and energy flow.
6. Management practices maintain or promote the physical and biological conditions necessary to sustain native populations and communities.
7. Desired species are being allowed to complete seed dissemination in one out of every three years (Management actions will promote the opportunity for seedling establishment when climatic conditions and space allow).
8. Conservation of federally threatened or endangered and other special status species are promoted by restoration and maintenance of their habitats.
9. Native species are emphasized in the support of ecological function.
10. Non-native plant species are used only in those situations in which native species are not readily available in sufficient quantities or are incapable of maintaining or achieving properly functioning conditions and biological health.
11. Periods of rest from disturbance or livestock use during times of critical plant growth or regrowth are provided when needed to achieve healthy, properly functioning conditions (The timing and duration of use periods shall be determined by the authorized officer).
12. Continuous, season-long livestock use is allowed to occur only when it has been demonstrated to be consistent with achieving healthy, properly functioning ecosystems.
13. Facilities are located away from riparian-wetland areas wherever they conflict with achieving or maintaining riparian-wetland function.
14. Development of springs and seeps or other projects affecting water and associated resources shall be designed to protect the ecological functions and processes of those sites.
15. Grazing on designated ephemeral (annual and perennial) rangeland is allowed to occur only if reliable estimates of production have been made, the BLM has established an identified level of annual growth or residue to remain on site at the end of the grazing season, and adverse effects on perennial species are avoided.



## **2.1.2 ALTERNATIVE 2 (Preferred)**

### **2.1.2.1 Standards of Public Land Health in the NEMO Planning Area**

Adopt a set of regional standards of public land health in the NEMO Planning. These regional standards would replace the fallback standards currently in effect. Regional standards of public land health address all resources and uses on all public lands and cover five environmental components to be applied in the context of public land management.

**1. Soils:** Soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, geology, landform, and past uses. Adequate infiltration and permeability of soils allow accumulation of soil moisture necessary for optimal plant growth and vigor, and provide a stable watershed. As indicated by:

- a. canopy and ground cover are appropriate for the site;
- b. there is diversity of plant species with a variety of root depths;
- c. litter and soil organic matter are present at suitable sites;
- d. microbiotic soil crusts are maintained and in place;
- e. evidence of wind or water erosion does not exceed natural rates for the site; and
- f. soil permeability, nutrient cycling and water infiltration are appropriate for the soil type.

**2. Native Species:** Healthy, productive and diverse habitats for native species, including special status species (Federal T&E, federally proposed, Federal candidates, BLM-sensitive, or California State T&E, and unusual plant assemblages) are maintained in places of natural occurrence. As indicated by:

- a. photosynthetic and ecological processes continue at levels suitable for the site, season, and precipitation regimes;
- b. plant vigor, nutrient cycle, and energy flow are maintaining desirable plants and ensuring reproduction and recruitment;
- c. plant communities are producing litter within acceptable limits;
- d. age class distribution of plants and animals are sufficient to overcome mortality fluctuations;
- e. distribution and cover of plant species and their habitats allow for reproduction and recovery from localized catastrophic events;
- f. alien and noxious plants and wildlife do not exceed acceptable levels;
- g. appropriate natural disturbances are evident; and
- h. populations and their habitats are sufficiently distributed to prevent the need for listing special status species.

**3. Riparian/Wetland and Stream Function:** Wetland systems associated with subsurface, running, and standing water function properly and have the ability to recover from major disturbance (Refer to Appendix J). Hydrologic conditions are maintained. As indicated by:



- a. vegetative cover adequately protects banks and dissipates energy during peak water flows;
- b. dominant vegetation is an appropriate mixture of vigorous riparian species;
- c. recruitment of preferred species is adequate to sustain the plant community;
- d. stable soils store and release water slowly;
- e. plant species present indicate soil moisture characteristics are being maintained;
- f. there is minimal cover of shallow-rooted invader species, and they are not displacing deep-rooted native species;
- g. shading of stream courses and water sources support riparian vertebrates and invertebrates;
- h. stream is in balance with water and sediment being supplied by the watershed;
- i. stream channel size and meander is appropriate for soils, geology, and landscape; and
- j. adequate organic matter (litter and standing dead plant material) is present to protect the site and to replenish soil nutrients through decomposition.

**4. Water Quality:** Surface and groundwater complies with objectives of the Clean Water Act and other applicable water quality requirements, including meeting the California State standards. As Indicated By<sup>2</sup>:

- a. The following do not exceed the applicable requirements: chemical constituents, water temperature, nutrient loads, fecal coliform, turbidity, suspended sediment, and dissolved oxygen.
- b. Achievement of the standards for riparian, wetlands, and water bodies.
- c. Aquatic organisms and plants (e.g., macroinvertebrates, fish, algae, and plants) indicate support for beneficial uses.
- d. Monitoring results or other data that show water quality is meeting the standard.

---

<sup>2</sup> This standard was negotiated between the California State Water Resources Control Board and the BLM, and includes the following components:

Management Objective: For water bodies, the primary objective is to maintain the existing quality and beneficial uses of water, protect them where they are threatened (and livestock grazing activities are a contributing factor), and restore them where they are currently degraded (and livestock grazing activities are a contributing factor). This objective is of even higher priority in the following situations: (a) where beneficial uses of water bodies have been listed as threatened or impaired pursuant to Section 303(d) of the Federal Clean Water Act; (b) where aquatic habitat is present or has been present for Federal threatened or endangered, candidate, and other special status species dependent on water resources; and, (c) in designated water resource sensitive areas such as riparian and wetland areas.

**Meaning That:** BLM will, pursuant to the Clean Water Act:

- Maintain the physical, biological, and chemical integrity of waters flowing across or underlying the lands it administers;
- Protect the integrity of these waters where it is currently threatened;
- Insofar as is feasible, restore the integrity of these waters where it is currently impaired;
- Not contribute to pollution and take action to remedy any pollution resulting from its actions that violates applicable California (including the requirements identified in Regional Basin Plans), or Tribal water quality standards or other applicable water quality requirements (e.g., requirements adopted by SWRCB or RWQCB in California, or US EPA pursuant to Section 303(d) of the Clean Water Act or the Coastal Zone Reauthorization Act). Where action related to grazing management is required, such action will be taken as soon as practicable but not later than the start of the next grazing year (in accordance with 43 CFR 4180.1).
- Be consistent with the non-degradation policies identified in the Regional Basin Plans in California.
- Work with the State (including the Regional Water Quality Control Boards) and U.S. EPA to establish appropriate beneficial uses for public waters, establish appropriate numeric targets for 303(d)-listed water bodies, and implement the applicable requirements to ensure that water quality on public lands meets the criteria for the designated beneficial uses of the water.
- Develop and implement Best Management Practices (BMPs) approved by the SWRCB to protect and restore the quality and beneficial uses of water, and monitor both implementation and effectiveness of the BMPs. These BMPs will be developed in full consultation, coordination, and cooperation with permittees and other interests.



In the meantime there are many management practices already in place or being proposed in NEMO that address water quality directly and also through soil-water-vegetation relationships (e.g., Amargosa River ACEC and Wild and Scenic River actions). These will be incorporated into a full array of BMPs. BMPs generally address prevention and minimization of non-point sources of pollution, particularly erosion and sedimentation, which can degrade water quality. They will include Guidelines applied to livestock grazing operations, standard design and mitigation measures for roads, mining, utilities and other surface disturbance operations, management of off-highway vehicle activities, and measures that address the needs of species and habitats.

### **2.1.2.2 Rangeland Guidelines For Grazing Uses In The NEMO Planning Area:**

Adopt a set of regional guidelines in the NEMO Planning Area for grazing management. These regional guidelines would replace the current fallback guidelines, would identify grazing management practices to achieve the regional standards and would address the principles of grazing management practices as identified in 43 CFR 4180.2.

1. Facilities shall be located away from riparian-wetland areas wherever they conflict with achieving or maintaining riparian-wetland functions.
2. The development of springs and seeps or other projects affecting water and associated resources shall be designed to protect the ecological functions and processes of those sites.
3. Grazing activities at an existing range improvement that conflict with achieving proper functioning conditions (PFC) and resource objectives for wetland systems (lentic, lotic, springs, addits, and seeps) shall be modified so PFC and resource objectives can be met, and incompatible projects shall be modified to bring into compliance. The BLM will consult, cooperate, and coordinate with affected interests and livestock producer(s) prior to authorizing modification of existing projects and initiation of new projects. New range improvement facilities shall be located away from wetland systems if they conflict with achieving or maintaining PFC and resource objectives.
4. Supplements shall be located a sufficient distance away from wetland systems so they do not conflict with maintaining riparian wetland functions.
5. Management practices shall maintain or promote perennial stream channel morphology (e.g., gradient, width/depth ratio, channel roughness, and sinuosity) and functions that are appropriate to climate and landform.
6. Grazing management practices shall meet State and Federal water quality standards. Impoundments (stock ponds) and developed springs having a sustained discharge yield of less than 200 gallons per day to surface or groundwater are excepted from meeting State drinking water standards per SWRCB Resolution Number 88-63.
7. In the California Desert Conservation Area all wildfires in grazing allotments shall be suppressed. However, to restore degraded habitats infested with invasive weeds (e.g., tamarisk) prescribed burning may be utilized as a tool for restoration. Prescribed burns may be used as a management tool where fire is a natural part of the regime.



8. In years when weather results in extraordinary conditions, seed germination, seedling establishment and native plant species growth shall be allowed by modifying grazing use.
9. Grazing on designated ephemeral range land shall be allowed only if reliable estimates of production have been made, an identified level of annual growth or residue to remain on site at the end of the grazing season has been established, and adverse effects on perennial species are avoided.
10. During prolonged drought, range stocking shall be reduced to achieve resource objectives and/or prescribed perennial forage utilization. Livestock utilization of key perennial species on year-long allotments shall be checked prior to spring growing season (about March 1) when the Palmer Severity Drought Index/Standardized Precipitation Index indicates dry conditions are expected to continue.
11. Through the assessment process or monitoring efforts, the extent of invasive and/or exotic plants and animals shall be recorded and evaluated for future control measures. Methods and prescriptions shall be implemented, and an evaluation will be completed to ascertain future control measures.
12. Restore, maintain or enhance habitats to assist in the recovery of federally-listed threatened and endangered species. Restore, maintain or enhance habitats of special status species including federally proposed and candidate, BLM sensitive, or California State T&E to promote their conservation.
13. Grazing activities shall support biological diversity across the landscape, and native species and microbiotic crusts are to be maintained.
14. Experimental and research efforts shall be encouraged to provide answers to grazing management and related resource concerns through cooperative and collaborative efforts with outside agencies, groups, and entities.
15. Based on Holechek's (et al., 1998) work or the best scientific information available, (Table 2-2) livestock utilization level of key perennial species in the Mojave Desert vegetative communities shall not exceed 40 percent on ranges that are grazed during the dormant season and are meeting standards. Rangelands that are grazed during the active growing season and are meeting standards shall not exceed 25 percent utilization of key species. The utilization range between 25 and 40 percent is for those forage species with a proper use factor that will allow consumption up to and between 25 and 40 percent otherwise lower use limits will prevail. Until modified with more current information, utilization of the following general range types shall be prescribed for grazing use.



**Table 2-2: Utilization Guidelines for Different Vegetative Community Types in the CDD\***

Average Annual Precipitation		% Use of Key Species for Moderate Grazing**	Vegetative Community Types	Reference
Cm.	In.			
10-13	4-8	25-35	Salt desert shrubland	Hutchings & Stewart 1953; Cook and Child 1971
13-30	8-12	30-40	Semidesert grass & shrubland	Valentine 1970; Paulsen & Ares 1961; Martin & Cable 1974; Holechek 1991
13-30	8-12	30-40	Sagebrush grassland	Pechanec & Stewart 1949; Laycock and Conrad 1981
40-130	16-50	30-40	Mountain shrub land	Pickford & Reid 1948; Skovlin et al. 1976
25-40	9-16	30-40	Pinyon-juniper woodland	Pieper 1970

\*Adapted from Holechek et al. and Holechek 1998

\*\* Rangelands in good condition and/or grazed during the dormant season can withstand the higher utilization level. Those in poor condition or grazed during active growth should receive the lower utilization level.

Monitoring of grazing allotments resource conditions will be routinely assessed to determine if Public Land Health Standards are being met. In those areas not meeting one or more standards, monitoring processes will be established if they do not presently exist to monitor indicators of health until the standard or resource objective has been attained. Livestock trail networks, grazed plants, livestock facilities, and animal waste are expected impacts in all grazing allotments and will be considered during analysis of the assessment and monitoring process. Activity plans for other uses or resources that overlap an allotment could have prescribed resource objectives that may further constrain grazing activities, e.g., ACEC. In an area where a standard has not been met, the results from monitoring changes to grazing management required to meet standards will be reviewed annually. During the final phase of the assessment process, the Range Determination includes the schedule for the next assessment of resource conditions. To attain standards and resource objectives, the best science will be used to determine appropriate grazing management actions. Cooperative funding and assistance from other agencies, individuals, and groups will be sought to collect prescribed monitoring data for indicators of each standard.



## Summary Comparison of Candidate Amendments and Alternatives

### Standards and Guidelines

Alternative 2 (Preferred)	
<b>Alternative 1 (No Action)</b>	<p>Adopt a set of regional standards of public land health for all public lands in the NEMO Planning Area.</p> <p><b>1. Soils:</b> Soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, geology, landform, and past uses. Adequate infiltration and permeability of soils allow accumulation of soil moisture necessary for optimal plant growth and vigor, and provide a stable watershed. As indicated by:</p> <ul style="list-style-type: none"> <li>• canopy and ground cover are appropriate for the site;</li> <li>• there is diversity of plant species with a variety of root depths;</li> <li>• litter and soil organic matter are present at suitable sites;</li> <li>• microbiotic soil crusts are maintained and in place;</li> <li>• evidence of wind or water erosion does not exceed natural rates for the site; and</li> <li>• soil permeability, nutrient cycling and water infiltration are appropriate for the soil type.</li> </ul> <p><b>2. Native Species:</b> Healthy, productive and diverse habitats for native species including special status species (Federal T&amp;E, federally proposed, Federal candidates, BLM sensitive, or California State T&amp;E, and unusual plant assemblages) are maintained in places of natural occurrence. As indicated by:</p> <ul style="list-style-type: none"> <li>• photosynthetic and ecological processes continue at levels suitable for the site, season, and precipitation regimes;</li> <li>• plant vigor nutrient cycle and energy flow are maintaining desirable plants and ensuring reproduction and recruitment</li> <li>• plant communities are producing litter within acceptable limits;</li> <li>• age class distribution of plants and animals are sufficient to overcome mortality fluctuations;</li> <li>• distribution and cover of plant species and their habitats allow for reproduction and recovery from localized catastrophic events;</li> <li>• alien and noxious plants and wildlife do not exceed acceptable levels;</li> <li>• appropriate natural disturbances are evident; and</li> <li>• populations and their habitats are sufficiently distributed to prevent the need for listing special status species.</li> </ul> <p><b>3. Riparian/Wetland and Stream Function:</b> Wetland systems associated with subsurface, running, and standing water function properly and have the ability to recover from major disturbances. Hydrologic conditions are maintained. As indicated by:</p> <ul style="list-style-type: none"> <li>• vegetative cover adequately protect banks and dissipates energy during peak water flows;</li> <li>• dominant vegetation is an appropriate mixture of vigorous riparian species.</li> <li>• Recruitment of preferred species is adequate to sustain the plant community.</li> <li>• stable soils store and release water slowly;</li> <li>• plant species present indicate soil moisture characteristics are being maintained;</li> <li>• there is minimal cover of shallow-rooted invader species, and they are not displacing deep-rooted native species.</li> <li>• shading of stream courses and water sources support riparian vertebrates and invertebrates;</li> <li>• stream is in balance with water and sediment being supplied by the watershed;</li> <li>• stream channel size and meander is appropriate for soils geology, and landscape; and</li> <li>• adequate organic matter (litter and standing dead plant material) is present to protect the site and to replenish soil nutrients through decomposition.</li> </ul> <p><b>4. Water Quality:</b> Water quality will meet State and Federal standards including exemptions allowable by law. As indicated by:</p> <ul style="list-style-type: none"> <li>• dissolved oxygen levels, aquatic organisms and plants (e.g., macro invertebrates, fish and algae) indicate support of beneficial uses;</li> <li>• chemical constituents, water temperature, nutrient loads, fecal coliform and turbidity are appropriate for the site or source; and</li> <li>• best management practices will be implemented.</li> </ul>
Grazing Management Guidelines	
Alternative 2 (Preferred)	
<b>Alternative 1 (No Action)</b>	<p>Adopt a set of regional guidelines in the NEMO Planning Area for grazing management. These regional guidelines would replace the current fallback guidelines and include additional tools (e.g. wildfire) and a more comprehensive set of guidelines. They would identify grazing management practices to achieve the regional standards and would address the principles of grazing management practices as identified in 43 CFR 4180.2.</p>



## 2.2 DESERT TORTOISE CONSERVATION AND RECOVERY

The alternatives identified in this document are intended to promote the recovery of the desert tortoise. The goal of any adopted strategy at a minimum would be to achieve the recovery criteria defined within the *Recovery Plan for Desert Tortoise (Mojave Population)*. Meeting these criteria means to achieve the necessary progress to delist the desert tortoise. These recovery criteria are listed in the Proposed Desert Tortoise Conservation Strategy (Appendix A). The Desert Tortoise Recovery Plan (pp. 45-55) recommended several actions to meet recovery criteria objectives. Chief among these were:

- establish areas where viable desert tortoise populations are maintained;
- develop and implement management prescriptions for these areas to address threats sufficient to meet recovery criteria;
- provide sufficient habitat in these areas to ensure that management strategies are effective;
- monitor tortoise populations to assess effectiveness of management prescriptions in meeting recovery objectives in these areas (Refer to Appendix D);
- establish an environmental education program to facilitate understanding of desert tortoise threats and recovery needs, and effect compliance with management strategies in these areas; and
- continue research necessary to assess relative importance of threats to the desert tortoise in these areas and to evaluate and improve mechanisms to address these threats.

These recommended actions apply to desert tortoise populations and habitat in all of the Desert Tortoise Recovery Units and form the basis for the alternatives in the NEMO Planning effort. If alternative strategies were identified that also met the recovery objectives, they were also considered. The six recovery plan actions and the No Action alternative therefore form the parameters for the range of alternatives. Not all actions require CDCA plan-level decisions. For additional activity-level planning see Appendix A.

The alternatives for desert tortoise recovery respond to eighteen issues that involve potential threats to the desert tortoise and its habitat identified from the Desert Tortoise Recovery Plan, other literature reviews, past biological assessments and USFWS Biological Opinions. Some of these potential threats were identified based on rangewide analyses covering all six Desert Tortoise Recovery Units; consequently, a separate issue analysis was conducted by the NEMO Biological Team on public lands in the Eastern Mojave Recovery Unit, to determine their relative importance to this population<sup>3</sup>. Based on the issue analysis, the categories of management prescriptions to address desert

---

<sup>3</sup> See Appendix A, proposed Desert Tortoise Conservation Strategy for a discussion of threats in the East Mojave and a summary list of major resources and Appendix C for a discussion of issues affecting the desert tortoise and its recovery.



tortoise recovery were identified. Potential threats more important in the East Mojave desert tortoise population include:

- surface disturbances resulting in habitat loss;
- disturbances, if linear or large, that contribute to fragmentation of habitat;
- cumulative effects that are not adequately analyzed or tracked;
- forage competition which may occur between desert tortoise and cattle and burros; and
- direct predation on desert tortoise by ravens and other predators.

### 2.2.1 ALTERNATIVE 1 (NO ACTION)

The existing strategies identified in the CDCA Plan, *The Tortoise Rangewide Plan*, *California Statewide Tortoise Management Policy*, and biological opinions issued under the Federal Endangered Species Act form the No Action alternative. The existing management situation is described in more detail in *Current Desert Tortoise Management Situation in BLM-Administered Lands Portion of Northern and Eastern Mojave Planning Area* (Foreman 1998).

#### 2.2.1.1 Desert Wildlife Management Areas.

Utilize existing Category I, II and III desert tortoise habitat with no additional special conservation strategies prescribed for the areas. Goals identified for desert tortoise habitat categories are defined as:

- Category I: Maintain stable, viable populations and increase populations where possible.
- Category II: Maintain stable, viable populations
- Category III: Limit declines to the extent possible using mitigation measures.

Utilize existing Multiple-Use Class (MUC) on public lands in the Planning Area recognizing that:

- tortoise management direction has been set forth in the BLM *Rangewide Management Plan* and BLM *California Statewide Tortoise Management Policy*;
- the Rangewide plan and Statewide policy are based on tortoise habitat Categories that have been adopted in the CDCA Plan and are now being implemented; and
- the three habitat management plans (HMPs) (totaling 232,000 acres) identified in the CDCA Plan have not been written.

The three Habitat Management Plan Areas would remain in effect as designated by the CDCA Plan. These HMPs are smaller in acreage than the desert tortoise Category I habitat for the same area (refer to Table 2-3 for acreage comparison and Chapter 7, Figure 6a for a graphic representation of the No Action Alternative).



Table 2-3: Category I Habitat compared to Current HMP		
Desert Tortoise Units	Category I*	Current HMP
Piute-Fenner Unit	173,850	About 165,000
Ivanpah Valley Unit	37,280	About 25,000
Shadow Valley Unit	114,060	About 42,000
N. Ivanpah Unit	29,110	0
Total Acres	354,300	Abt 232,000

\* There is no Category II or III habitat located within the current HMP area.

### 2.2.1.2 General Management Strategy

Utilize existing direction from the CDCA Plan and Statewide Desert Tortoise Policy in all desert tortoise habitat on public lands, without modification. Existing strategies identified in the CDCA Plan, the BLM and CDFG's Statewide Desert Tortoise Policy, programmatic agreements or biological opinions<sup>4</sup> with the USFWS would remain in effect, subject to periodic update and renegotiations. Current Biological Opinions and programmatic agreements include:

- B.O. 1-6-92-F-19, July 13, 1993: Biological Opinion on the affects of cattle grazing in the California Desert on the desert tortoise resulted in a number of terms and conditions for continued grazing use in tortoise habitat.
- B.O. 1-5-94-F-107 April 20, 1994: Biological Opinion on the effects of cattle grazing in desert tortoise critical Habitat. Terms and conditions in this opinion were similar to the previous.
- B.O. 1-5-96-F-296R, February 28, 1997: Consultation for the purpose of extending the previous consultation resulted in terms and conditions applicable to cattle grazing on public lands from the 1994 opinion which is currently in effect.
- Programmatic Biological opinion for mineral exploration and other small mining operations of less than 10 acres was prepared by the USFWS for BLM. For these mining activities, standard mitigation measures apply (refer to Appendix A, mitigation measures).

Biological consultation would occur with wildlife agencies on measures in the CDCA Plan and would continue on all projects proposed in desert tortoise habitat on a case-by-case basis, and projects not covered by B.O.s would be considered on a case-by-case basis, may involve consultation with USFWS or CDFG and may include additional terms and conditions for the conservation and recovery of the desert tortoise and its habitat.

**Compensation:** A mitigation fee based on the amount of acreage disturbed will be required of proponents of new development. The formula used to determine the amount of acreage to be acquired is described in the California Statewide Desert

<sup>4</sup> An evaluation prepared by the U.S. Fish and Wildlife Service under Section 7 of the Endangered Species Act providing their conclusions on whether a proposed project is likely to jeopardize the continued existence of a listed species, or destroy or adversely modify critical habitat.



Tortoise Management Policy and considers the following factors:

- Habitat category,
- Impact on adjacent lands reducing tortoise densities,
- Whether or not the use will tend to induce growth,
- Duration of the effect (i.e., short term - less than 10 years, long term - greater than 10 years),
- Whether or not there is moderate to heavy existing disturbance.

These factors are added together to arrive at an acreage multiplier used to determine the amount of compensation acres to be acquired by the project proponent. Category III habitat receives a compensation rate of 1.0 regardless of other factors.

#### **2.2.1.3 Vehicle Management**

Route designation would occur in all critical desert tortoise habitat, consistent with Federal regulation and CDCA Plan guidance, based on the existing route inventory. Routes not approved for vehicle access would, in most instances, be obliterated, barricaded, signed or marked. Specific techniques chosen would depend on location, potential effectiveness, and sensitivity of resources and availability of manpower and funding.

Rules for stopping, parking and camping would remain unchanged. Currently vehicle parking along routes of travel is limited to within 300 feet of the route and specific areas may be signed open or closed to protect sensitive resources adjacent to the route. Use of washes is governed by area designations. In Limited areas, vehicle use in desert washes is governed by the multiple-use class. Additionally, washes as access routes may have travel limitations such as speed limits or seasonal closure imposed to protect resources or to minimize conflicts with other uses. The open camping zone along roads within the desert tortoise critical habitat may be limited to 100 feet in sensitive areas.

#### **2.2.1.4 Grazing Management**

Utilize Fallback Standards of rangeland health and Guidelines for grazing management, CDCA Plan, allotment management plans, and terms and conditions from the existing USFWS biological opinions<sup>5</sup>. Maximum utilization levels on key forage species and minimum thresholds of ephemeral plant production required for ephemeral cattle authorizations to occur are set in these biological opinions.

#### **2.2.1.5 Burro Management**

Utilize existing CDCA Plan management and the existing East Mojave Herd Management Area (HMA) Plan to manage burros within desert tortoise habitat, including those within critical and/or Category I desert tortoise habitat.

---

<sup>5</sup> Federal Biological Opinion 1-5-94-F-107 (FWS 1994) and its extension 1-5-96-F-296R (FWS 1997).



### 2.2.1.6 Land Tenure

Existing public lands in critical and Category I habitat would be retained, consistent with the Statewide Desert Tortoise Management Policy. Most land would be acquired as compensation for project disturbances or as part of exchanges.

## 2.2.2 ALTERNATIVE 2 (Modified Recovery Plan)

### 2.2.2.1 Identify Desert Wildlife Management Area Boundaries and MUC.

Establish two Desert Wildlife Management Areas consisting of four ACECs (Piute-Fenner, Ivanpah Valley, Shadow Valley, and Northern Ivanpah Valley) totaling 354,300 acres (see Table 2-3) as shown on Figure 6b, Chapter 7. These units include all critical habitat in these areas. The four ACECs will encompass and replace the existing wildlife habitat management areas (HMP Areas). Category I habitat would be adjusted slightly to coincide with the critical habitat boundaries including in the Ivanpah Unit (Category I eliminated north of the second main linear utility running across the southern extent of Ivanpah Dry Lake). All tortoise habitat outside of the Desert Wildlife Management Areas would be assigned Category III tortoise habitat.

Change MUC M to L in three units (Piute-Fenner, Shadow Valley, and Northern Ivanpah Valley) totaling 48,642 acres. Changes in MUC acreages are shown in Table 2-4a. (Refer to Chapter 7, Figure 6b)

Table 2-4a: Desert Tortoise Conservation and Recovery Identify Area MUC			
Alternative 2 Designate 4 ACECs			
Desert Tortoise Units	Acres L or C	Acres M	Total Acres
Piute-Fenner Unit	169,890	3,960	173,850
Ivanpah Valley Unit	37,280	0	37,280
Shadow Valley Unit	75,307	38,753	114,060
N. Ivanpah Unit	23,181	5,929	29,110
Total	305,658	48,642	354,300

### 2.2.2.2 General Management Strategy

Modify existing CDCA Plan management in all desert tortoise habitat in the Planning Area, by adopting specific management strategies, including the following:

- The BLM will enter into a programmatic consultation with USFWS on all desert tortoise habitat (Category I and III) in the NEMO Planning Area. The programmatic consultation will generally cover all projects that result in new surface disturbance of 100 acres or less. Projects that (1) disturb more than 100 acres or (2) require an EIS or (3) require a CDCA Plan Amendment will necessitate a separate consultation with USFWS and are not covered by this plan amendment.
- Limit additional cumulative surface disturbance to 1% of public lands in each



of the four proposed units of the identified Desert Wildlife Management Areas (see Appendix F);

- Adopt prescriptions and mitigation measures outlined in Appendix A, (*Proposed NEMO Desert Tortoise Conservation Strategy*) except as outlined for cumulative new surface disturbance and vehicle, grazing, burro and raven management specific to each alternative; and
- Existing programmatic agreements or biological opinions with the USFWS would be replaced with a new programmatic agreement incorporating project stipulations listed in Attachment 1 of Appendix A. Biological consultation with wildlife agencies on measures in the CDCA Plan would occur, and projects in desert tortoise habitat would continue on a programmatic basis, under the terms of the existing Statewide Desert Tortoise Policy and the terms identified herein.
- Implement cooperative phased raven management program as described in Appendix A. This program includes actions targeted at (1) raven research; (2) alteration of raven habitat; (3) lethal actions against ravens in specific situations; (4) administrative actions the agency can undertake; and (5) possible actions for future phases. It may be modified or supplemented later by a multi-agency program authorized by the Desert Managers Group. Proposed projects on public lands anywhere in the Planning Area which have a potential for increasing raven populations will be reviewed for design and operation features and will require mitigation measures to reduce or eliminate the opportunity for proliferation of ravens.
- Change the compensation ratio in all Category I habitat to 5:1.

### 2.2.2.3 Vehicle Management

Designate routes of travel in the DWMAs, consistent with Federal regulation and the existing route inventory. Refer to Chapter 7, Figures 4a - d for the route inventory and proposed network under this alternative and Appendix Q for a discussion of the route designation process and methodology. Routes not approved for vehicle access would, in most instances, be obliterated, barricaded, signed or marked. Specific techniques chosen would depend on location, potential effectiveness, and sensitivity of resources and availability of manpower and funding.

Rules for parking and camping would be modified as follows:

- Parking and camping will be allowed within 50 feet of route centerline within proposed Desert Wildlife Management Areas.
- All navigable washes would be designated as closed routes in proposed DWMAs.
- Interpretive signing and informational kiosks will be installed.



#### **2.2.2.4 Grazing Management**

Utilize Regional Standards of public land health and Guidelines for Grazing Management, CDCA Plan, allotment management plans, and terms and conditions from the existing USFWS biological opinions. For allotments within the DWMAs:

- Terminate all authorizations related to grazing activities and cancel the portion of the allotment in the DWMAs.
- Develop new allotment boundaries, where feasible, from portions of affected allotments outside of the DWMAs.

#### **2.2.2.5 Burro Management**

Eliminate the Clark Mountain Herd Management Area. This area includes some lands now under NPS jurisdiction, which have not been available for burro use since passage of the California Desert Protection Act. Most of the remaining herd concentration areas are located in one of the proposed DWMAs. Burros would be removed.

#### **2.2.2.6 Land Tenure**

Acquire all private lands in DWMAs from willing sellers.

### **2.2.3 ALTERNATIVE 3 (Addresses Recovery Plan Goals/Objectives With Two Focal Populations)**

#### **2.2.3.1 Identify Desert Wildlife Management Area Boundaries and MUC.**

Establish two Desert Wildlife Management Areas consisting of three ACECs (Piute-Fenner, Ivanpah Valley, and Shadow Valley) totaling 325,190 acres (see Table 2-3) as shown on Figure 6c, Chapter 7. These units include all critical habitat in the NEMO Planning Area. The three units would modify and replace the existing wildlife habitat management areas (WHMAs). Category I habitat would be eliminated in Northern Ivanpah Valley, reduced in Ivanpah Valley (eliminated north of the second main linear utility running across the southern extent of Ivanpah Dry Lake) and adjusted slightly in the other two units to coincide with the critical habitat boundaries. All tortoise habitat outside of the DWMAs would be assigned Category III tortoise habitat.

Change MUC M to L in two units (Piute-Fenner and Shadow Valley) totaling 42,713 acres. Changes in MUC acreages are shown in Table 2-4b. (Refer to Chapter 7, Figure 6c for a map of this alternative.)



Table 2-4b: Desert Tortoise Conservation and Recovery			
Identify Area MUC			
Alternative 3 Designate 3 ACECs			
Desert Tortoise DWMA Unit	Acres L or C	Acres M	Total Acres
Piute-Fenner Unit	169,890	3,960	173,850
Ivanpah Valley Unit	37,280	0	37,280
Shadow Valley Unit	75,307	38,753	114,060
N. Ivanpah Unit	0	0	0
Total	282,477	42,713	325,190

### 2.2.3.2 General Management Strategy

Alternative 3 is the same as Alternative 2, as modified:

- The programmatic consultation will also cover electrical transmission lines or pipelines within an existing CDCA Plan utility corridor for which the NEPA mechanism is an EA and not an EIS regardless of size.
- Implement regional cooperative raven management program as described in Appendix A, which targets removal where juvenile tortoise mortality is high and raven predation is known to occur. Lethal removal of specific offending ravens would be allowed in this alternative. Proposed projects on public lands anywhere in the Planning Area which have a potential for increasing raven populations will be reviewed for design and operation features and will require mitigation measures to reduce or eliminate the opportunity for proliferation of ravens.
- Change the compensation ratio in all Category I habitat to 5:1.

### 2.2.3.3 Vehicle Management

Same as Alternative 2 except the following:

- Stopping, parking and camping will be allowed within 100 feet of route centerline within proposed DWMA's.
- Where navigable washes are designated open or limited, parking and camping will be allowed only within the banks of the wash.

### 2.2.3.4 Grazing Management

Utilize Regional Standards and Guidelines for Grazing Management, CDCA Plan, allotment management plans, and terms and conditions from the existing USFWS biological opinions. For allotments within the DWMA's:

- Allow voluntary relinquishment of grazing leases and related authorizations and retire allotment upon relinquishment.
- Remove cattle from the DWMA's when ephemeral forage production is less than 230 pounds per acre as per the grazing strategy from 3/15 to 11/1. The NEMO grazing strategy will be developed within a year and implemented



within two years. The strategy shall be a written plan detailing the areas of removal, natural cattle movements, existing and potential improvements, and other constraints of cattle management based on adopted DWMA's.

- Terminate ephemeral allotments and terminate ephemeral authorization for ephemeral/perennial allotments.
- Temporary nonrenewable grazing use will not be authorized.

#### **2.2.3.5 Burro Management**

Modify the Clark Mountain HMA boundary to exclude that area located within the Proposed Shadow Valley Unit of the identified DWMA and eliminate the herd concentration area within this same unit. Re-establish the HMA in the eastern portion of the Clark Mountain Herd Area. The Appropriate Management Level (AML) would be revised to 60 burros, consistent with CDCA Plan target HMA levels identified for the modified area in 1981, pending the outcome of a 5-year carrying capacity analysis, which would be based on the remaining forage provided by the modified HMA.

Burros located in the proposed DWMA would be removed and any potential drift managed through relocation by live capture or indirect means, such as manipulation of water supply, to the remaining herd concentration areas within the Clark Mountain HMA. Terms and conditions would be identified and incorporated into the East Mojave HMA plan, and would include 40%<sup>6</sup> maximum utilization levels on key forage species in order for burro use to continue in desert tortoise habitat; as well as strategies to manage drift into the DWMA or the Mojave National Preserve; areas to be fenced; and other needed range improvements and requirements specifically to promote desert tortoise conservation and recovery (See Appendix E).

#### **2.2.3.6 Land Tenure**

Same as Alternative 2.

### **2.2.4 ALTERNATIVE 4 (Addresses Recovery Plan Goals/Objectives With One Focal Population)**

#### **2.2.4.1 Identify Desert Wildlife Management Area Boundaries and MUC.**

Establish a DWMA consisting of two units (Piute-Fenner and Ivanpah Valley) totaling 211,130 acres (see Table 2-3) as shown on Figure 6d, Chapter 7. These units include all critical habitat in the NEMO Planning Area south of Interstate 15 (i.e., all except in Shadow Valley). As in Alternative 2, the two units would be designated as ACECs, and the existing wildlife habitat management areas (WHMAs) would be deleted. Category I habitat would be eliminated in Northern Ivanpah Valley and Shadow Valley, the Shadow Valley WHMA would be deleted, reduced

---

<sup>6</sup> Maximum utilization levels on key forage species would be further limited to 30% until range condition improves to "good".



in Ivanpah Valley (eliminated north of the second main linear utility running across the southern extent of Ivanpah Dry Lake) and adjusted slightly in the Piute-Fenner Unit to coincide with the critical habitat boundaries. All tortoise habitat outside of the DWMA would be assigned Category III tortoise habitat.

Change MUC M to L in the Piute-Fenner Unit on 3,960 acres. Changes in MUC acreages are shown in Table 2-4c below. (Refer to Chapter 7, Figure 6d. for a map)

Table 2-4c: Desert Tortoise Conservation and Recovery Identify Area MUC			
Alternative 4 Designate 2 ACECs			
Desert Tortoise DWMA Unit	Acres L or C	Acres M	Total Acres
Piute-Fenner Unit	169,890	3,960	173,850
Ivanpah Valley Unit	37,280	0	37,280
Shadow Valley Unit	0	0	0
N. Ivanpah Unit	0	0	0
Total	207,170	3,960	211,130

#### 2.2.4.2 General Management Strategy

Alternative 4 is the same as Alternative 2 except:

- Projects that (1) disturb more than 250 acres or (2) require an EIS or (3) require a CDCA Plan Amendment will necessitate a separate consultation with USFWS and are not covered by this plan amendment;
- The programmatic consultation will also cover electrical transmission lines or pipelines within an existing CDCA Plan utility corridor for which the NEPA mechanism is an EA and not an EIS (rather than 1%).
- Cumulative new surface disturbance limits of 3 percent in DWMA's.
- A comprehensive phased raven management program that would not include lethal removals. Ravens that are known to prey on tortoise may be removed through non-lethal means, only.

#### 2.2.4.3 Vehicle Management

Same as Alternative 2 except stopping, parking and camping will be allowed within 100 feet of route centerline within proposed DWMA's

#### 2.2.4.4 Grazing Management

Utilize Regional Standards of public land health and Guidelines for Grazing Management, CDCA Plan, allotment management plans, and terms and conditions from the existing USFWS biological opinions. For allotments within the wildlife management area:

- Allow voluntary relinquishment of grazing leases and related authorizations and retire allotment upon relinquishment.



- Retire ephemeral allotments, and terminate ephemeral authorization for ephemeral/perennial allotments. (Refer to Table 2-4 for a list of affected allotments and Appendix E for proposed terms and conditions for Cattle Grazing)

#### 2.2.4.5 Burro Management

Same as Alternative 1 (No Action)

#### 2.2.4.6 Land Tenure

Same as Alternative 2.

### 2.2.5 ALTERNATIVE 5 (Preferred)

#### 2.2.5.1 Identify Desert Wildlife Management Area Boundaries and MUC's.

Alternative 3 as modified: Establish two DWMA's consisting of three ACECs (Piute-Fenner, Ivanpah Valley, and Shadow Valley) totaling 312,485 acres (see Table 2-3) as shown on Figure 6e, Chapter 7. The three units would be designated as ACECs, and the existing wildlife habitat management areas (WHMAs) would be deleted. Category I habitat would be eliminated in Northern Ivanpah Valley, reduced in Ivanpah Valley (eliminated north of the second main linear utility running across the southern extent of Ivanpah Dry Lake) and in Shadow Valley (eliminated west of Bull Spring Wash and Turquoise Mountain Road), and adjusted elsewhere slightly to coincide with the critical habitat boundaries. These units include all critical habitat in the NEMO Planning Area except approximately 12,700 acres west of Bull Run Wash (Turquoise Mountain Road). All tortoise habitat outside of the DWMA would be assigned Category III tortoise habitat.

Change MUC M to L in three units (Piute-Fenner, Shadow Valley, and Northern Ivanpah Valley) totaling 30,010 acres. Changes in MUC acreages are shown in Table 2-4d. (Refer to Chapter 7, Figure 6e for a map of the Preferred Alternative)

Table 2-4d: Desert Tortoise Conservation and Recovery Identify Area MUC			
Preferred Designate 3 ACECs			
Desert Tortoise DWMA Unit	Acres L or C	Acres M	Total Acres
Piute-Fenner Unit	169,890	3,960	173,850
Ivanpah Valley Unit	37,280	0	37,280
Modified Shadow Valley Unit	75,305	26,050	101,355
N. Ivanpah Unit	0	0	0
Total	279,195	30,010	312,485



### **2.2.5.2 General Management Strategy**

Same as Alternative 3

### **2.2.5.3 Vehicle Management**

Same as Alternative 3

### **2.2.5.4 Grazing Management**

Same as Alternative 3. (Refer to Table 2-4 for a list of affected allotments and Appendix E for proposed terms and conditions for Cattle Grazing)

### **2.2.5.5 Burro Management**

Same as Alternative 3

### **2.2.5.5 Land Tenure**

Same as Alternative 2.

## **2.2.6 Implementation Strategy for Desert Tortoise Recovery**

The implementation strategy for desert tortoise recovery is provided in Appendix B. It identifies time frames and commitments associated with components of the alternative recovery strategies that require substantial Federal and State resources. These commitments are specific to implementation of desert tortoise recovery in the NEMO planning area, except as identified to address follow-up coordination issues.



Summary of Alternatives for Desert Tortoise Recovery (Amendments 2,3,4)

Issue	Alt # 1 (No Action)	Alt # 2 (Mod. Recov. Plan, Two Focal Populs.)	Alt # 3 (Two Focal Populs.)	Alt # 4 (One Focal Popul.)	Alt # 5 (Preferred)
Designate Wildlife Management Area units and Identify MUC (Amendment 2)	Utilize existing DT mgt. direction set forth in the BLM <i>Rangewide Management Plan</i> and BLM <i>California Statewide Tortoise Management Policy</i> on 354,300 acres of Cat I DT habitat with no identified DWMA or additional mgt. strategies.	Designate 2 DWMA's consisting of 4 units totaling 354,300 acres	Designate 2 DWMA's consisting of 3 units totaling 325,190 acres	Designate 2 DWMA's consisting of 2 units totaling 211,130 acres	Alternative 3; modified, Designate 2 DWMA's consisting of 3 units to exclude: the Turquoise Mountain area west of Bull Spring Wash and Turquoise Mtn Road in the Shadow Valley Unit.
	Management units (CAT 1) Piute-Fenner 173,850 Ivanpah Valley 37,280 Shadow Valley 114,060 N. Ivanpah 29,110 CAT I Total 354,300  305,658 - MUC L or C 48,642 - MUC M (232,000 - WHMA)	Management units (CAT 1) Piute-Fenner 173,850 Ivanpah Valley 37,280 Shadow Valley 114,060 N. Ivanpah 29,110 CAT I Total 354,300  305,658 - MUC L or C 48,642 - MUC M to L (Change) 354,300 - ACEC 354,300 - CAT 1 - DWMA	Management units (CAT 1) Piute-Fenner 173,850 Ivanpah Valley 37,280 Shadow Valley 114,060 CAT I Total 325,190  282,477 - MUC L or C 42,713 - MUC M to L (Change) 325,190 - ACEC 325,190 - CAT 1 - DWMA	Management units (CAT 1) Piute-Fenner 173,850 Ivanpah Valley 37,280 CAT I Total 211,130  207,170 - MUC L or C 3,960 - MUC M to L (Cng) 211,130 - ACEC 211,130 - CAT 1-DWMA	Management units (CAT 1) Piute-Fenner 173,850 Ivanpah Valley 37,280 Shadow Valley 101,355 CAT I Total 312,485  279,195 - MUC L or C 30,010 - MUC M to L (Cng) 312,485 - ACEC 312,485 - CAT 1 - DWMA
General Management Strategy	Utilize Existing Mgt. strategies: -Existing biological opinions and agreements -Existing local raven mgt. Activities, defer to coordinated multi-agency program to be developed in the future -Consultation case-by-case except for a few small programmatic agreements (e.g., small mining (10 ac.), small disturbance (2 ac) ) -Statewide MOU for compensation	- Utilize a Programmatic consultation in all DT habitat There are 3 triggers for consultations: 1. Any proposal that would disturb more than 100 acres. 2. Any project for which the NEPA mechanism is an EIS, regardless of the size of the project 3 Any project which can only be considered through a plan amendment process, regardless of the size of the project. This requirement applies to all areas of tortoise habitat - both inside and outside DWMA's. -Cumulative new surface disturbance limits 1%; -Project specific disturbance limits 100 acres. -Adopt DT strategy prescriptions & Mitigation (APP A) -A cooperative phased raven mgt. program - Change the compensation ratio in all Category I habitat to 5:1.	Same as Alt 2 except: Utilize a Programmatic consultation in all DT habitat. The first trigger would be modified as follows: Any proposal that would disturb more than 100 acres except in the following instance: a proposal for a electrical transmission line or pipeline within an existing CDCA Plan utility corridor for which the NEPA mechanism is an EA and not an EIS. - Change the compensation ratio in all Category I habitat to 5:1.	Same as Alt 2 except: Utilize a Programmatic consultation in all DT habitat. The first trigger would be modified as follows: Any proposal that would disturb more than 100 acres (if not already the figure used), except in the following instance: a proposal for a electrical transmission line or pipeline within an existing CDCA Plan utility corridor for which the NEPA mechanism is an EA and not an EIS. - Cumulative new surface disturbance limits 3% with same triggers as Alt 3. -Project specific 250 ac - CAT I & III inside and outside of DWMA's -A comprehensive phased raven mgt program where lethal removal would not occur. -Change the compensation	Alternative 3



**Summary of Alternatives for Desert Tortoise Recovery (Amendments 2,3,4)**

Issue	Alt # 1 (No Action)	Alt # 2 (Mod. Recov. Plan, Two Focal Populs.)	Alt # 3 (Two Focal Populs.)	Alt # 4 (One Focal Popul.)	Alt # 5 (Preferred)
<b>Vehicle Management</b>	<p>Route designation would occur in all Cat I habitat, consistent with Federal regulation and CDCA Plan guidance, based on the existing route inventory.</p> <ul style="list-style-type: none"> <li>Rules for parking and camping would remain unchanged: stopping and parking along routes of travel is limited to within 300 feet of the route;</li> <li>Specific areas may be signed Open or Closed to protect sensitive resources.</li> <li>Use of washes is governed by area designations. In limited areas, vehicle use in desert washes is governed by the multiple-use class.</li> <li>Additionally, washes as access routes may have travel limitations such as speed limits or seasonal closure imposed to protect resources.</li> <li>The open camping zone along roads within sensitive area (e.g. critical habitat) may be limited to 100 feet.</li> </ul>	<p>Designate routes of travel in the four proposed units of the DWMA, consistent with Federal regulation and the existing route inventory. Rules for parking and camping would be modified as follows:</p> <ul style="list-style-type: none"> <li>Parking and camping will be allowed within 50 feet of route centerline within the proposed DWMA</li> <li>All navigable washes would be designated as Closed</li> <li>Interpretive signing and informational kiosks will be installed.</li> </ul>	<p>Same as Alt 2 except:</p> <ul style="list-style-type: none"> <li>Parking and camping will be allowed within 100 feet of route centerline within the proposed DWMA.</li> <li>Where navigable washes are designated open or limited, parking and camping will be allowed only within the banks of the wash.</li> </ul>	<p>ratio in all Cat I habitat to 5:1. Same as Alt 2 except:</p> <ul style="list-style-type: none"> <li>Parking and camping will be allowed within 100 feet of route centerline within the proposed DWMA.</li> </ul>	Alternative 3
<b>Livestock Grazing</b>	<p>Utilize Fallback Standards and Guidelines CDCA Plan, allotment management plans, and terms and conditions from the existing USFWS biological opinions.</p>	<p>Utilize Regional Standards and Guidelines for Grazing Management, CDCA Plan, allotment management plans, and terms and conditions from the existing USFWS biological opinions. For allotments within DWMMAs:</p> <ul style="list-style-type: none"> <li>Terminate grazing authorizations and the portion of the allotment within DWMMAs</li> <li>Develop new allotment boundaries, where feasible, from portions of affected allotments outside of the DWMA.</li> </ul>	<p>Utilize Regional Standards and Guidelines for Grazing Management, CDCA Plan, allotment management plans, and terms and conditions from the existing USFWS biological opinions. For allotments within DWMMAs:</p> <ul style="list-style-type: none"> <li>Allow voluntary relinquishment of grazing leases, and related authorizations.</li> <li>Temporary nonrenewable grazing use (perennial) will not be authorized</li> <li>Cattle shall be removed from the DWMA as per the grazing strategy from 3/15 to 11/1 during years when ephemeral forage production is less than 230 pounds per acre. The grazing strategy will be developed within a year and implemented within two years. The Strategy shall be a written plan detailing the area of removal, natural cattle movements, existing and potential improvements, and other constraints of cattle management.</li> </ul>	<p>Utilize Regional Standards and Guidelines for Grazing Management, CDCA Plan, allotment management plans, and terms and conditions from the existing USFWS biological opinions. For allotments within DWMMAs:</p> <ul style="list-style-type: none"> <li>Allow voluntary relinquishment of grazing leases and related authorizations.</li> <li>Terminate ephemeral allotments and terminate ephemeral authorization for ephemeral/perennial allotments.</li> </ul>	Same as Alt 3



Summary of Alternatives for Desert Tortoise Recovery (Amendments 2,3,4)					
Issue	Alt # 1 (No Action)	Alt # 2 (Mod. Recov. Plan, Two Focal Populs.)	Alt # 3 (Two Focal Populs.)	Alt # 4 (One Focal Popul.)	Alt # 5 (Preferred)
			<ul style="list-style-type: none"> <li>• Terminate ephemeral allotments and terminate ephemeral authorization for ephemeral/perennial allotments.</li> </ul>		
<b>Wild horse &amp; Burro</b>	Utilize existing CDCA Plan management and the existing East Mojave HMA Plan to manage burros within DT habitat including those within critical and /or Cat I habitat, with additional management parameters (terms and conditions).	Eliminate the Clark Mountain HMA, since most of the area which has been identified for burro management in the CDCA Plan, is located in the Shadow Valley Unit of the DWMAs. Burros would be removed.	Modify the Clark Mountain HMA to exclude that area located within the proposed DWMAs. The reestablished HMA boundary would be adjacent to the Nevada border north of I-15, in northern Ivanpah Valley. The AML would be 60 burros, per existing CDCA Plan considerations, pending the outcome of a revised 5-year carrying capacity analysis.	Same as Alternative 1 (No Action) existing management practices.	Alternative 3
<b>Land Tenure</b>	Use current land acquisition strategies Retain all CAT I DT habitat	Acquire all lands in the DWMAs from willing sellers	Same as Alternative 2	Same as Alternative 2	Alternative 2



**Table 2-5: Summary of Grazing Alternatives**

Allotment	Alternative 1 (No Action)			Alt 2--Mod. Recov. Plan	Alt 3--(Two Focal Populs.)	Alt 4--(One Focal Populs.)	Alt 5 -- Preferred
	Name & #	PL Acres	AUMs	E/P	Mgt.		
Clark Mountain, 09003		97,560 1/	1,303 1/	E/P	A, B, C	No Change.	No Change.
Colton Hills, 09202		0 2/	0 2/	E/P	D	D	D
Crescent Peak, 09013		6,719 1/	359 1/	E/P	A, B, C	No Change.	No Change.
Deep Springs, 05062		43,932	1,250	P	A	No Change.	No Change.
Eureka Valley, 05001		17,000	0	E	A	No Change.	No Change.
Fish Lake Valley, 0096		577	52	P	A	No Change.	No Change.
Gold Valley, 09212		0 2/	0 2/	E/P	D	D	D
Horsethief Spgs, 09007		150,140	2,424	E/P	A	No Change.	No Change.
Hunter Mtn, 05013		53,920	0	P	A, B	No Change.	No Change.
Jean Lake, 09017		9,806	300	E/P	A, B, C	230 lbs. Of ephemeral forage on all allotments from 3/15-11/1 or remove livestock, and potentially reduce AUMs to 211. No temporary non-renewable	Same as Alt 3
Kessler Springs, 09008		14,161 1/	481 1/	E/P	A, B, C	230lbs. Of ephemeral forage on all allotments from 3/15-11/1 or remove livestock, and potentially reduce AUMs to 432. No temporary non-renewable	Same as Alt 3
Last Chance, 05061		35,532	1,639	P	A	No Change.	No Change.
Oasis, 05059		22,968	656	P	A	No Change.	No Change.
Pahrump Valley, 08000		26,952	353	E/P	A, C	No Change.	No Change.
Piute Valley, 09004		20,145	0	E	A, B, C	230lbs. Of ephemeral forage on all allotments from 3/15-11/1 or remove livestock. No temporary non-renewable	Same as Alt 3
Round Valley, 09726		0 2/	0 2/	E/P	D	D	D
South Oasis, 05063		15,173	477	P	A, B	No Change.	No Change.
Valley View, 09000		31,575 1/	849 1/	E/P	A, B, C	230lbs. Of ephemeral forage on all allotments from 3/15-11/1 or remove livestock, and potentially reduce AUMs to 713. No temporary non-renewable	Same as Alt 3
Valley Wells, 09009		223,007 1/	4,272 1/	E/P	A, B, C	230lbs. Of ephemeral forage on all allotments from 3/15-11/1 or remove livestock, and potentially reduce AUMs to 3,706. No temporary non-renewable	Same as Alt 3
White Wolf, 05060		13,733	307	P	A	No Change.	No Change.
<b>Total</b>		<b>873,479</b>	<b>17,886</b>				



1/ A portion of the allotment is administered by US National Park Service (NPS) after designation of the Mojave National Preserve (MNP). The AUMs have been adjusted down based on the pro-rata share of BLM and NPS administration.

2/ All of the allotment administered by NPS after designation of the MNP (shaded gray). Delete allocations and area for this allotment from CDCA Plan.

3/ The remainder of these two allotments administered by the BLM have been proposed for cancellation when certain conditions are met. This decision is dependent upon the NPS terminating its portion of these two allotments, Congress will be notified, and range improvements will be reviewed for wildlife or other uses.

A. Grazing management activities are directed and guided by the *California Desert Conservation Area Plan*, 1980.

B. Grazing activities are managed under an existing allotment management plan.

C. Mitigation measures are prescribed for cattle grazing activities in desert tortoise habitat. Mitigation measures for grazing activities are listed under U.S. Fish and Wildlife Service's two biological opinions labeled *Biological Opinion for Cattle Grazing on 25 Allotments in the Mojave Desert, Riverside and San Bernardino Counties, California* (1-8-94-F-17, extended 5/17/99), and *Biological Opinion for the Interim Livestock Grazing Program Proposed by the Bureau of Land Management and National Park Service in Mojave Desert Tortoise Critical Habitat* (1-5-96-F-296R).

D. This allotment is managed by the NPS, and for current and future grazing management refer to the recently published *Draft General Management Plan, Environmental Impact Statement, Mojave National Preserve, August 1998*.

E. Types of rangeland vegetation that consistently produces livestock primarily composed of annual forbs and grasses. Forage production can vary extremely from year to year, which requires management flexibility to prescribe stocking rate and period of use.

P. Types of rangeland vegetation that consistently produces livestock forage primarily composed of perennial shrubs and grasses. This type of forage production allows consistent forage allocation for grazing use.

Allotment	BLM Allotments			NPS Allotments			Total						
	Allotment Name & No.	BLM	Private	State	Total	NPS	Private	State	Total	Federal	Private	State	Total
Clark Mountain, 9003		97,560	871	5,537	103,968	15,176	739	69	15,984	112,736	1,610	5,606	119,952
Piute Valley, 9004		20,145	2,049	1,338	23,532	22,823	1,463	571	24,857	42,968	3,512	1,909	48,389
Valley View, 9000		31,575	1,961	988	34,524	280,519	7,308	7,600	295,427	312,094	9,269	8,588	329,951
Valley Wells, 9009		223,007	3,364	10,531	236,902	19,804	323	1,057	19,804	242,811	3,687	11,588	258,086

Proposed ACEC	BLM	Private	State	Total Acres	Allotments
Shadow Valley	107,072	1,768	5,220	114,060	Valley Wells
Modified Shadow Valley	95,670	1,748	3,937	101,355	Valley Wells
North Ivanpah Valley	27,298	660	1,152	29,110	Clark Mountain
Ivanpah Valley	34,830	2,450	0	37,280	Valley View, Kessler Springs, & Jean Lake
Piute-Fenner Valley	130,474	37,210	6,166	173,850	Piute Valley



## **2.3 AMARGOSA VOLE CONSERVATION AND RECOVERY**

Five areas along the Amargosa River have been identified for potential implementation of various Amargosa vole conservation strategies. Two of these are existing BLM ACECs: Grimshaw Lake Natural Area, which includes almost half of the critical habitat designated for this species; and Amargosa Canyon Natural Area, which represents the southern extent of known historic habitat for this species. A third area includes the remainder of designated Amargosa Vole critical habitat and extends from the southern end of Grimshaw Lake Natural Area to the northern end of Amargosa Canyon Natural Area, connecting the two. A fourth area extends from the Grimshaw Lake Natural Area northward to incorporate additional riparian habitat found along the central Amargosa River.

A fifth area, located roughly 30 miles north of these areas on the Amargosa River, is referred to as the Upper Amargosa Reach. It includes upstream flow and source waters for the Central Amargosa River, important mesquite bosque wildlife habitat and ephemeral wetlands.

The alternatives include additional historic range of the Amargosa vole as well as adjacent riparian and mesquite bosque areas that are not currently known habitat for the Amargosa vole. Maintenance of water quantity and quality, particularly from springs and upstream riverine water flow are considered to be essential for the maintenance of Amargosa vole habitat.

Alternatives were developed that address vole recovery issues to the degree feasible at this time. They were also developed to be site-specific, as well as watershed-based, in order to facilitate Amargosa vole recovery, ecosystem planning and multiple-use management on public lands. There is currently insufficient information on population status, dynamics and other related issues to know what it will take to assure the Amargosa vole's continued existence. All alternatives would continue case-by-case consultations on proposed activities. A programmatic consultation may be developed later.

In addition, during analysis of Amargosa vole alternatives, the Amargosa River was determined to be potentially eligible under the National Wild and Scenic Rivers (WSR) System. Vole recovery alternatives include proposals for consideration of WSR eligibility and further suitability studies that would be carried out in conjunction with ACEC Plan development. This issue is addressed separately in Section 2.11 of this Chapter.

### **2.3.1 ALTERNATIVE 1 (NO ACTION)**

#### **2.3.1.1 Amargosa Vole Management Area Options**

Continue existing management of all Amargosa vole habitat on public lands with no additional designations, strategies or associated special management. Alternative 1 (No Action) consists of activities already identified in the CDCA Plan for the conservation and recovery of threatened and endangered species and in follow-up management plans developed for the ACECs (Amargosa Canyon and Grimshaw Lake, total 9,310 acres).



### **2.3.1.2 Amargosa Vole Proposed Management Prescriptions**

Utilize existing CDCA Plan management direction on public lands in all known Amargosa vole habitat. Route designation would occur in MUC Limited areas, including Amargosa vole critical habitat, as time and personnel permit. Strategies and measures identified in existing ACEC Plans would remain in effect and would primarily consist of riparian restoration activities, monitoring of identified vole populations and associated wetlands vegetation, and recreation management. These ACEC management plans were prepared prior to Federal listing of the vole, designation of critical habitat, and development of the Amargosa Vole Recovery Plan. Conference and consultation with State and Federal wildlife agencies, respectively, on measures in the CDCA Plan and existing ACEC Management Plans, or any action that could affect the Amargosa vole, would continue.

## **2.3.2 ALTERNATIVE 2**

### **2.3.2.1 Amargosa Vole Management Area Options**

Designate the Amargosa River ACEC (Refer to Chapter 7, Figure 9a and b). This alternative could affect 10,450 acres of public lands in addition to the existing Amargosa Canyon and Grimshaw Lake Natural Areas ACECs including:

- suitable riparian habitat located east of the current Amargosa Canyon ACEC (2,400 acres in the China Ranch Wash area);
- other suitable riparian habitat located upstream from these areas to a point located five miles north of Shoshone including the Shoshone Cave Whip-scorpion Wildlife Habitat Management Area (WHMA) (5,920 acres);
- Upper Amargosa Mesquite Bosque WHMA (950 acres); and
- designated Amargosa vole critical habitat not in the existing ACECs (1,180 acres of public lands).

This alternative would also identify State (1,280 acres) and private lands (1,360 acres) in addition to the 630 acres already identified in the existing ACEC Plans for possible Federal exchange or acquisition from willing landowners and inclusion in the Amargosa River ACEC, including the following:

- 400 acres private lands east of Grimshaw Lake;
- 200 acres private lands within the Amargosa Canyon ACEC;
- 320 acres of State lands and 160 acres private lands that are critical habitat between Grimshaw Lake and Amargosa Canyon ACECs;
- 320 acres of State lands in the Old Spanish Trail area;
- 640 acres of State lands in the China Ranch Wash area; and
- 600 acres of private land along the Amargosa River in the Shoshone area.



### 2.3.2.2 Amargosa Vole Proposed Management Prescriptions

Adopt strategies and measures prescribed in the existing Amargosa Canyon and Grimshaw Lake Natural Area ACEC Management Plans, as modified by recommended strategies and actions specified in the Amargosa Vole Recovery Plan, as a single coordinated management plan, focused on riparian, ephemeral wetland and mesquite bosque resource protection and monitoring along the entire length of the proposed Amargosa River ACEC. (Refer to Appendix H for an outline of these recommended strategies and actions and further details may be found in the existing ACEC Plans). The management plan for this ACEC would be integrated, augmented and adjusted to address additional issues of concern for long-term management of the vole and other sensitive, threatened and endangered species occurring along this riverine system, within three years. This ACEC Management Plan would also include a programmatic consultation with the USFWS, should the scope of actions and activities detailed in that plan warrant such consultation. Issues, strategies and measures to be addressed in this proposed ACEC Management Plan would include:

- maintain viable populations of Amargosa vole;
- develop monitoring, and in general, additional information about Amargosa vole populations and habitat use;
- conduct additional plant and wildlife inventory work to identify all locations of special status species in the affected management unit, and develop appropriate measures to protect those found;
- develop strategies for riparian resource protection and monitoring in cooperation with private landowners and other Federal, State, and local agencies;
- identify mechanisms to track progress in reaching the goals specified in the Amargosa Vole Recovery Plan;
- conserve and protect Amargosa watershed, riparian, ephemeral wetland and mesquite bosque resources;
- conduct route designation in conjunction with the ACEC Management Plan.
- implement a land tenure strategy, targeting suitable Amargosa vole habitat within the expanded ACEC (Refer to Appendix N). Where land acquisition or exchange is not identified, conservation easements, cooperative riparian management strategies, and other measures would be utilized. BLM would work with interested landowners to maximize the potential for recovery of the Amargosa vole;
- protect riparian habitat utilized by four listed neotropical migratory bird species;
- conserve other natural area values; and
- develop a suitability determination for Wild and Scenic River designation in areas determined eligible in this planning effort. (Refer to Appendix O)



## **ALTERNATIVE 3 (Preferred)**

### **2.3.2.2 Amargosa Vole Management Area Options**

Alternative 2, as modified below: Designate the Amargosa River ACEC (Refer to Chapter 7, Figure 9a and b). This alternative would affect 8,050 acres of public lands in addition to the existing ACEC acreages, including:

- suitable riparian habitat located east of the current Amargosa Canyon ACEC (2,400 acres in the China Ranch Wash area);
- other suitable riparian habitat located upstream from these areas to a point located one mile south of Shoshone (3,520 acres);
- Upper Amargosa Mesquite Bosque WHMA (950 acres); and
- designated Amargosa vole critical habitat not in the existing ACECs (1,180 acres of public lands).

This alternative is the same as Alternative 2 except lands are excluded in an area of the river from one mile south of Shoshone to a point five miles north of Shoshone and an existing 40 acre sand and gravel pit (T.21N. R. 7E, Sec 29, Lot 1 abutting Highway 127).

It would also identify State (1,280 acres) and private lands (760 acres) in addition to the 630 acres already identified in the existing ACEC Plans for possible Federal exchange or acquisition from willing landowners and inclusion in the Amargosa River ACEC. This would include the same areas for acquisition as Alternative 2 except lands in the Shoshone/Tecopa area (approximately 600 acres).

### **2.3.2.3 Amargosa Vole Proposed Management Prescriptions**

Same as Alternative 2.

## **2.3.3 ALTERNATIVE 4**

### **2.3.4.1 Amargosa Vole Management Area Options**

Create a new Amargosa vole ACEC with boundaries coinciding to designated Amargosa vole critical habitat in the central Amargosa River watershed comprising 4,520 acres. The existing boundaries of the Amargosa Canyon and Grimshaw Lake Natural Area ACECs would be modified to exclude designated critical habitat: including 205 acres of the existing Amargosa Canyon ACEC and 1,055 acres of the existing Grimshaw Lake ACEC. Other existing ACEC and HMP boundaries would be unaffected. The proposed Amargosa vole ACEC would be dedicated to conservation of Amargosa vole populations and habitat. (Refer to Chapter 7, Figure 9a and b)

It would also identify State (320 acres) and private lands (160 acres) for possible Federal exchange or acquisition from willing landowners and inclusion in the Amargosa River ACEC.



#### **2.3.4.2 Amargosa Vole Proposed Management Prescriptions**

Adopt the Amargosa vole Recovery Plan recommendations as an overall management strategy for the proposed Amargosa Vole ACEC. The management plan for this ACEC would focus on Amargosa vole issues and would be completed within three years. This ACEC Management Plan would also include a programmatic consultation with the USFWS, if the scope of actions and activities detailed in that plan warrant such consultation. Issues, strategies and measures to be addressed in this proposed ACEC Management Plan would include:

- maintain viable populations of Amargosa vole;
- develop monitoring, and in general, additional information about Amargosa vole populations and habitat use;
- identify mechanisms to track progress in reaching the goals specified in the Amargosa vole Recovery Plan and provide guidelines for multiple use, if needed;
- conduct route designation in conjunction with the ACEC Management Plan.
- implement a land tenure strategy, targeting suitable Amargosa vole habitat within the expanded ACEC. (Refer to Appendix N); and
- develop a suitability determination for Wild and Scenic River designation in areas determined eligible in this planning effort. (Refer to Appendix O)



## SUMMARY COMPARISON OF CANDIDATE AMENDMENTS AND ALTERNATIVES

Amargosa Vole Conservation and Recovery - Management Area Options (Amendment # 5)			
Alternative 1 (No Action)	Alternative 2	Alternative 3 (Preferred)	Alternative 4
Continue existing management of all Amargosa vole habitat on public lands with no additional designations, strategies or associated special management. Alternative 1 (No Action) consists of activities already identified in the CDCA Plan for the conservation and recovery of threatened and endangered species and in follow-up management plans developed for the ACECs (Amargosa Canyon and Grimshaw Lake ACECs).	<p>Designate the Amargosa River ACEC. This alternative could affect 10,450 acres of public lands in addition to the existing Amargosa Canyon and Grimshaw Lake Natural Areas ACECs including:</p> <ul style="list-style-type: none"> <li>• suitable riparian habitat located east of the current Amargosa Canyon ACEC (2,400 acres in the China Ranch Wash area);</li> <li>• other suitable riparian habitat located upstream from these areas to a point located five miles north of Shoshone including the Shoshone Cave Whip-scorpion Wildlife Habitat Management Area (WHMA) (5,920 acres);</li> <li>• Upper Amargosa Mesquite Bosque WHMA (950 acres);</li> <li>• designated Amargosa vole critical habitat not in the existing ACECs (1,180 acres of public lands); and</li> </ul> <p>It would also identify State (1,280 acres) and private lands (1,360 acres in addition to the 630 acres already identified in the existing ACEC Plans) for possible Federal exchange or acquisition from willing landowners and inclusion in the Amargosa River ACEC, including the following:</p> <ul style="list-style-type: none"> <li>• 400 acres private lands east of Grimshaw Lake;</li> <li>• 200 acres private lands within the Amargosa Canyon ACEC;</li> <li>• 320 acres of State lands and 160 acres private lands that are critical habitat between Grimshaw Lake and Amargosa Canyon ACECs;</li> <li>• 320 acres of State lands in the Old Spanish Trail area;</li> <li>• 640 acres of State lands in the China Ranch Wash area; and</li> <li>• 600 acres of private land along the Amargosa River in the Shoshone area.</li> </ul>	<p>Alternative 2, as modified: Designate the Amargosa River ACEC. This alternative would affect 8,050 acres of public lands in addition to the existing ACEC acreages.</p> <p>This alternative is the same as Alternative 2 except lands are excluded in an area of the river from one mile south of Shoshone to a point five miles north of Shoshone and an existing 40 acre sand and gravel pit (T. 21N. R. 7E, Sec 29, Lot 1 abutting Highway 127).</p> <p>It would also identify State (1,280 acres) and private (760 acres in addition to the 630 acres already identified in the existing ACEC Plans) lands for possible Federal exchange or acquisition from willing landowners and inclusion in the Amargosa River ACEC. This would include the same areas for acquisition as Alternative 2 except lands in the Shoshone/Tecopa area (approximately 600 acres).</p>	<p>Create a new Amargosa vole ACEC with boundaries coinciding to designated Amargosa vole critical habitat in the central Amargosa River watershed comprising 4,520 acres. The existing boundaries of the Amargosa Canyon and Grimshaw Lake Natural Area ACECs would be modified to exclude designated critical habitat: including 205 acres of the existing Amargosa Canyon ACEC and 1,055 acres of the existing Grimshaw Lake ACEC. Other existing ACEC and HMP boundaries would be unaffected. The proposed Amargosa vole ACEC would be dedicated to conservation of Amargosa vole populations and habitat. (Refer to Chapter 7, Figure 9a and b)</p> <p>It would also identify State (320 acres) and private lands (160 acres) for possible Federal exchange or acquisition from willing landowners and inclusion in the Amargosa vole ACEC.</p>



SUMMARY COMPARISON OF CANDIDATE AMENDMENTS AND ALTERNATIVES Amargosa Vole Conservation and Recovery - Management Prescriptions (Amendment # 5)			
Alternative 1 (No Action)	Alternative 2	Alternative 3 (Preferred)	Alternative 4
<p>Utilize existing CDCA Plan management direction on public lands in all known Amargosa vole habitat. Route designation would occur in MUC Limited areas, including Amargosa vole critical habitat, as time and personnel permit. Strategies and measures identified in existing ACEC Plans would remain in effect and would primarily consist of riparian restoration activities, monitoring of identified vole populations and associated wetlands vegetation, and recreation management. These ACEC management plans were prepared prior to Federal listing of the vole, designation of critical habitat, and development of the Amargosa Vole Recovery Plan. Conference and consultation with State and Federal wildlife agencies, respectively, on measures in the CDCA Plan and existing ACEC Mgt Plans, or any action that could affect the Amargosa vole, would occur.</p>	<p>Adopt strategies and measures prescribed in the existing Amargosa Canyon and Grimshaw Lake Natural Area ACEC Management Plans, as modified by recommended strategies and actions specified in the Amargosa Vole Recovery Plan, into a single coordinated management plan, focused on riparian ephemeral wetland and mesquite bosque resource protection and monitoring along the entire length of the proposed Amargosa River ACEC. (Refer to Appendix H for an outline of these recommended strategies and actions). The management plan for this ACEC would be integrated, augmented and adjusted to address additional issues of concern for long-term management of the vole and other sensitive, threatened and endangered species occurring along this riverine system, within three years. This ACEC Management Plan would also include a programmatic consultation with the USFWS, should the scope of actions and activities detailed in that plan warrant such consultation. Issues, strategies and measures to be addressed in this proposed ACEC Management Plan would include:</p> <ul style="list-style-type: none"> <li>• maintain viable populations of Amargosa vole;</li> <li>• develop monitoring, and in general, additional information about Amargosa vole populations and habitat use;</li> <li>• conduct additional plant and wildlife inventory work to identify all locations of special status species in the affected management unit, and develop appropriate measures to protect those found;</li> <li>• develop strategies for riparian resource protection and monitoring in cooperation with private landowners and other Federal, State, and local agencies;</li> <li>• identify mechanisms to track progress in reaching the goals specified in the Amargosa Vole Recovery Plan;</li> <li>• conserve and protect Amargosa watershed, riparian, ephemeral wetland and mesquite bosque resources;</li> <li>• conduct route designation in conjunction with the ACEC Management Plan.</li> <li>• implement a land tenure strategy, targeting suitable Amargosa vole habitat within the expanded ACEC (Refer to Appendix N). Where land acquisition or exchange is not identified, conservation easements, cooperative riparian management strategies, and other measures would be utilized. BLM would work with interested landowners to maximize the potential for recovery of the Amargosa vole;</li> <li>• protect riparian habitat utilized by four listed neotropical migratory bird species;</li> <li>• conserve other natural area values; and</li> <li>• develop a suitability determination for Wild and Scenic River designation in areas determined eligible in this planning effort. (Refer to Appendix O)</li> </ul>	<ul style="list-style-type: none"> <li>• Same as Alternative 2.</li> </ul>	<p>Adopt the Amargosa vole Recovery Plan recommendations as an overall management strategy for the proposed Amargosa Vole ACEC. The management plan for this ACEC would focus on Amargosa vole issues and would be completed within three years. This ACEC Management Plan would also include a programmatic consultation with the USFWS, if the scope of actions and activities detailed in that plan warrant such consultation. Issues, strategies and measures to be addressed in this proposed ACEC Management Plan would include:</p> <ul style="list-style-type: none"> <li>• maintain viable populations of Amargosa vole;</li> <li>• develop monitoring, and in general, additional information about Amargosa vole populations and habitat use;</li> <li>• identify mechanisms to track progress in reaching the goals specified in the Amargosa vole Recovery Plan and provide guidelines for multiple use, if needed;</li> <li>• conduct route designation in conjunction with the ACEC Management Plan.</li> <li>• implement a land tenure strategy, targeting suitable Amargosa vole habitat within the expanded ACEC. (Refer to Appendix N); and</li> <li>• develop a suitability determination for Wild and Scenic River designation in areas determined eligible in this planning effort. (Refer to Appendix O)</li> </ul>



## 2.4 T&E PLANTS IN THE LOWER CARSON SLOUGH

The following alternatives provide a public lands strategy to manage listed and sensitive plant species in the Lower Carson Slough- Northern Franklin Playa vicinity. Portions of this public land area have been designated critical habitat for the endangered Amargosa niterwort and the threatened Ash Meadows gumplant and are known to support the BLM-designated sensitive Tecopa birdsbeak as well. The federally threatened spring loving centaury may also occupy this area.

Three areas in particular, all located immediately adjacent to the California-Nevada Stateline near Death Valley Junction have been identified for potential application of conservation strategies for these threatened and endangered plant species. The critical habitat area designated for the Amargosa niterwort in the NEMO Planning Area is the only critical habitat that exists for this species. Together these areas comprise the Lower Carson Slough tributary to the Amargosa River.

The most critical issue for the endangered (Federal and State) Amargosa niterwort, according to the USFWS, is interruption of the water supply for its habitat. The habitat for this species is saline and alkaline sinks located near the terminus of spring seepages. The rarity of the soil and water conditions limit the geographical distribution of the species. All designated critical habitat for this species occurs on BLM-managed lands that are classified as MUC Limited or Moderate.

The Ash Meadows gumplant and the spring loving centaury, if present, are associated with areas of perched groundwater and are also very sensitive to depletion of spring water discharge. There are also concerns about over-commitment of the aquifer in Nevada. Because of the linkage between the Lower Carson Slough and the Amargosa River, an alternative addressing development of an Amargosa River watershed-based management strategy is also included in the range of alternatives.

The Chicago Valley Wild Horse Herd Management Area overlaps the Salt and Brackish Water Marsh Unusual Plant Assemblage consisting of a salt and brackish water marsh which supports the Amargosa niterwort. The horses also range on lands to the south of Old Meadows Road. Management prescriptions for wild horses and burros are covered in the Chicago Valley Herd Management Area Plan. The current AML is 28 wild horses and 28 burros. The best available information on population is four horses and four burros.

At this time, insufficient information exists on the two listed plant species to prepare a programmatic biological opinion for activities anticipated to occur on these lands. Therefore, case-by-case consultation would be required for activities proposed within their habitat. A programmatic opinion could be requested as a potential outcome of the future ACEC Management Plans prescribed for proposed management area alternatives.



## **2.4.1 ALTERNATIVE 1 (NO ACTION)**

### **2.4.1.1 Lower Carson Slough T&E Plant Management Area Options**

Utilize existing CDCA management direction on 1,540 acres of public lands designated as critical habitat (Refer to Chapter 7, Figure 10) for one endangered and one threatened plant species, without designation of additional management areas or associated special management strategies.

### **2.4.1.2 Lower Carson Slough T&E Management Direction And Strategies**

Guidelines identified in the CDCA Plan for MUC L and M public lands would remain in effect, consultation requirements with the USFWS under the Endangered Species Act would occur on a project-by-project basis for actions potentially affecting these two critical habitat units and the three listed species. Terms and conditions would be developed through the consultation process to mitigate effects of any approved actions.

As resources permit, route designation would occur in MUC L public land areas of the Amargosa niterwort critical habitat and the entire Ash Meadows gumplant critical habitat unit. Consultation and conference with the USFWS and California Department of Fish and Game (CDFG) respectively, on any measures in the CDCA Plan, and on all proposed projects with the potential to affect these three listed plant species or adversely modify the two designated critical habitat units, on a project-by-project basis, would continue to occur. Special consideration would be given to sensitive resources including listed plants located within the Salt and Brackish Water Marsh Unusual Plant Assemblage during the NEPA process. Design structures and specific terms and conditions would be incorporated into proposals to avoid, compensate and/or mitigate potential impacts to listed plant species.

## **2.4.2 ALTERNATIVE 2**

### **2.4.2.1 Lower Carson Slough T&E Plant Management Area Options**

Combine the two critical habitat units for the Amargosa niterwort and Ash Meadows gumplant to create one Lower Carson Slough ACEC totaling 4,340 acres (Figure 10). The Lower Carson Slough ACEC would be dedicated to conservation of special status plant populations, Amargosa River watershed values, ephemeral wetlands, mesquite bosques and riparian areas. The ACEC would be comprised of the following elements:

Amargosa niterwort critical habitat	1,200 acres
Ash Meadows gumplant critical habitat	340 acres
Lower Carson Slough linkage	2,800 acres

### **2.4.2.2 Lower Carson Slough T&E Management Direction And Strategies**

Establish a strategy for the proposed Lower Carson Slough ACEC to accomplish the conservation objectives for special status plants and riparian, ephemeral wetland and



mesquite bosque habitats. Integrate this strategy with that to be developed for the proposed Amargosa River ACEC (see Section 2.3).

The Lower Carson Slough ACEC Management Plan would be completed within 3 years and would include an Endangered Species Act consultation with the USFWS if the scope of actions warrants such consultation. Actions would include the following:

- identify locations of threatened, endangered and sensitive species and develop appropriate measures to protect them;
- develop a monitoring program for and determine habitat needs of Amargosa niterwort, Ash Meadows gumplant, spring-loving centaury and Tecopa birdsbeak;
- implement route designations;
- develop a strategy for conservation and monitoring of ephemeral wetlands, mesquite bosques and riparian areas in cooperation with adjacent private landowners and other Federal, State, and local agencies;
- identify mechanisms to track progress in reaching special status plant population and recovery goals;
- develop guidelines for road construction and other activities adjacent to special status plant populations;
- conduct route designation in conjunction with the ACEC Management Plan.
- administratively change the Appropriate Management Level (AML) for wild horses and burros from 28 horses and 28 burros to 12 horses and 0 burros to protect impacts on special status plants. This change reflects the current management strategy; and
- delineate the Amargosa aquifer and develop a strategy in cooperation with other Federal, State, and local agencies to safeguard surface and groundwater flows.

### **2.4.3 ALTERNATIVE 3**

#### **2.4.3.1 Lower Carson Slough T&E Plant Management Area Options**

Create two separate ACECs, the Amargosa Niterwort ACEC (1200 acres) and the Ash Meadows gumplant ACEC (340 acres), made up of critical habitat for these plants within California (Figure 10). The ACECs would be dedicated to conservation of special status plant populations found in the ACECs and would include all designated critical habitat for the Amargosa niterwort and Ash Meadow gumplant within the NEMO Planning Area.

#### **2.4.3.2 Lower Carson Slough T&E Management Direction And Strategies**

Establish specific strategies for the proposed Amargosa niterwort ACEC and the proposed Ash Meadows gumplant ACEC. These strategies would be applicable to conservation of habitat supporting remaining listed plant populations in these ACECs, including all designated critical habitat for the Amargosa niterwort and Ash Meadows gumplant in the NEMO Planning Area. This ACEC Management Plan would be completed within three years and would include a programmatic Endangered Species Act consultation with the USFWS, if the scope of actions warrant such consultation. Issues and management actions would be the same as Alternative 2.



SUMMARY COMPARISON OF CANDIDATE AMENDMENTS AND ALTERNATIVES			
T&E Plant Conservation and Recovery: Lower Carson Slough - Management Area Options (Amendment # 6)			
Alternative 1 (No Action)	Alternative 2 (Preferred)	Alternative 3	
Utilize existing CDCA management direction on 1,540 acres of public lands designated as critical habitat for one endangered and one threatened plant species	Combine the two critical habitat units for the Amargosa niterwort and Ash Meadows gumplant to create one Lower Carson Slough ACEC (4,340 acres). The Lower Carson Slough ACEC would be dedicated to conservation of special status plant populations in the ACEC, Amargosa River watershed values, ephemeral wetlands mesquite bosques and riparian areas. The ACEC would be comprised of the following elements: Amargosa niterwort critical habitat 1,200 acres Ash Meadows gumplant critical habitat 340 acres Lower Carson Slough linkage 2,800 acres	Create two separate ACECs, the Amargosa Niterwort ACEC (1200 acres) and the Ash Meadows gumplant ACEC (340 acres), made up of critical habitat for these plants within California. The ACECs would be dedicated to conservation of special status plant populations found in the ACECs and would include all designated critical habitat for the Amargosa niterwort and Ash Meadow gumplant within the NEMO Planning Area.	

SUMMARY COMPARISON OF CANDIDATE AMENDMENTS AND ALTERNATIVES			
T&E Plant Conservation and Recovery: Lower Carson Slough - Management Strategies			
Alternative 1 (No Action)	Alternative 2 (Preferred)	Alternative 3	
<p>Utilize existing CDCA Plan management direction on 1,540 acres of public lands designated as critical habitat for two listed plants on adjacent lands where three listed plants may be located with without special plant management strategy. Guidelines identified in the CDCA Plan for MUC Limited and Moderate public lands would remain in effect, consultation requirements with the USFWS under the Endangered Species Act would occur on a project-by-project basis for actions potentially affecting these two critical habitat units and the three listed species. Terms and conditions mitigating effects of the actions would be developed through the consultation process.</p> <p>As resources permit, route designation would occur in MUC Limited public land areas in portions of the Amargosa niterwort critical habitat and the entire Ash Meadows gumplant critical habitat unit. Consultation and conference with the USFWS and California Department of Fish and Game (CDFG) respectively, on any measures in the CDCA Plan, and on all proposed projects with the potential to affect these three listed plant species or adversely modify the two designated critical habitat units, on a project-by-project basis, would continue to occur; design structures and specific terms and conditions would be incorporated into proposals to avoid, compensate and/or mitigate potential impacts to listed plant species.</p>	<p>Establish a strategy for the proposed Lower Carson Slough ACEC to accomplish the conservation objectives for special status plants and riparian/ephemeral wetland and mesquite bosque habitats. Integrate this strategy with that to be developed for the proposed Amargosa River ACEC</p> <p>The Lower Carson Slough ACEC Management Plan would be completed within 3 years and would include an Endangered Species Act consultation with the USFWS if the scope of actions warrants such consultation. Actions would include the following:</p> <ul style="list-style-type: none"> <li>Identify locations of threatened, endangered and sensitive species and develop appropriate measures to protect them;</li> <li>Develop a monitoring program for and determine habitat needs of Amargosa niterwort, Ash Meadows gumplant, spring-loving centaury and Tecopa birdsbeak;</li> <li>Implement route designations;</li> <li>Develop a strategy for conservation and monitoring of ephemeral wetlands, mesquite bosques and riparian areas in cooperation with adjacent private landowners and other Federal, State, and local agencies; and</li> <li>Identify mechanisms to track progress in reaching special status plant population and recovery goals;</li> <li>Conduct route designation in conjunction with the ACEC Management Plan.</li> <li>Develop guidelines for road construction and other activities adjacent to special status plant populations;</li> <li>Change the Appropriate Management Level (AML) for wild horses and burros from 28 horses and 28 burros to 12 horses and 0 burros to protect impacts on special status plants.</li> </ul> <p>This change reflects the current management strategy.</p> <p>Delineate the Amargosa aquifer and develop a strategy in cooperation with other Federal, State, and local agencies to safeguard surface and groundwater flows.</p>	<p>This ACEC Management Plan would be completed within three years and would include a programmatic Endangered Species Act consultation with the USFWS, if the scope of actions warrant such consultation. Issues and management actions would be the same as Alternative 2.</p>	



## **2.5 BAT CONSERVATION IN THE SILURIAN HILLS**

The following alternatives provide a strategy on BLM-managed lands in the NEMO Planning Area to study and manage habitats for several designated sensitive bat species, and provide additional protection measures in the Silurian Hills. The alternatives address sensitive bat use sites in this area and could provide information and strategies that could be applicable to the entire CDCA. Establishment of a specified bat management area and collection of relevant habitat use patterns could also have ramifications upon the need for or content of future bat listing packages.

### **2.5.1 ALTERNATIVE 1 (NO ACTION)**

Utilize existing CDCA Plan direction on 7,400 acres of public lands supporting extensive habitat for several designated sensitive bat and other species, with no additional identified management area or special management strategies. Guidelines identified in the CDCA Plan for MUC Moderate public lands and additional requirements related to renewed mining operations and mine closures, would remain in effect. All existing routes in the area are currently designated open, consistent with MUC Moderate guidelines. In the future, site-specific seasonal or permanent vehicle route closures may be pursued, when specific wildlife threats or unnecessary and undue damage to public land resources are identified. (Refer to Chapter 7, Figure 11 for a map of the Silurian Hills)

### **2.5.2 ALTERNATIVE 2**

Create the Silurian Hills Bat Habitat Management Planning Area, comprised of 7,400 acres of public land in the Silurian Hills. Prepare a Habitat Management Plan (HMP) and change the existing Moderate MUC for public lands to Limited. Establish specific strategies designed to promote conservation of designated sensitive bats and other designated sensitive wildlife that use similar habitats. Issues and management actions to be addressed in the HMP for this area, to be prepared within three years, include:

- conserve Silurian Hills bat habitat, including both roosting and feeding sites;
- conduct additional research to map, determine life history and use patterns,
- identify threats and develop protection strategies for bats;
- inventory and monitor bat sites to track population trends;
- designate routes consistent with MUC Limited guidelines; and
- develop specific mitigation measures for active mining and reclamation strategies for inactive mines, which preserve their potential for bat use.

### **2.5.3 ALTERNATIVE 3 (PREFERRED)**

Change the existing Moderate MUC to Limited designation for 7,400 acres of public land in the Silurian Hills region, known to support extensive habitat for several designated sensitive bat species. Route designation would occur on MUC L lands, including seasonal limitations and/or closures to sensitive bat values (e.g. active bat maternity roosts).



SUMMARY COMPARISON OF CANDIDATE AMENDMENTS AND ALTERNATIVES		
Bat Conservation in the Silurian Hills: Management Area Options (Amendment # 7)		
Alternative 1 (No Action)	Alternative 2	Alternative 3 (Preferred)
<p>Utilize existing management direction and MUC Moderate on 7,400 acres of public land in the Silurian Hills region, that is known to support extensive habitat for several designated sensitive bat species.</p> <p>Guidelines identified in the CDCA Plan for MUC Moderate public lands and additional requirements related to renewed mining operations and mine closures, would remain in effect. All existing routes in the area are currently designated open, consistent with MUC Moderate guidelines. In the future, site-specific seasonal or permanent vehicle route closures may be pursued, if specific wildlife threats or undue and unnecessary damage to public land resources are identified.</p>	<p>Create the Silurian Hills Bat Habitat Management Planning Area, comprised of 7,400 acres of public land in the Silurian Hills region. Prepare a Habitat Management Plan (HMP) and change the existing Moderate MUC for public lands to Limited.</p> <p>Establish specific strategies designed to promote conservation of designated sensitive bats and other designated sensitive wildlife that use similar habitats. Issues and management actions to be addressed in the HMP for this area, to be prepared within three years, include:</p> <ul style="list-style-type: none"> <li>• Conservation of Silurian Hills bat habitat, including both roosting sites and feeding locations;</li> <li>• Additional research to map, determine life history and use patterns, identify threats and develop protection strategies for bats;</li> <li>• Inventories and monitoring of bat sites to track population trends;</li> <li>• Implementation of route designation, consistent with MUC Limited standards; and</li> <li>• Development of specific mitigation measures for active mining and reclamation strategies for inactive mines, which preserve their potential for bat use</li> </ul>	<p>Change the existing Moderate MUC to Limited designation for 7,400 acres of public land in the Silurian Hills region, known to support extensive habitat for several designated sensitive bat species. Route designation would occur on MUC L lands, including seasonal limitations and/or closures to sensitive bat values (e.g. active bat maternity roosts).</p>



## 2.6 CDCA PLAN MAINTENANCE ACTIONS

Several changes to the CDCA Plan (1980, as amended) are needed as a result of the passage of the California Desert Protection Act of 1994 (CDPA). National Environmental Policy Act review is not required for Congressional actions such as the CDPA (83 Stat. 852, Section 102 C and 40 CFR 1506.8). The changes to the CDCA Plan needed to conform to the CDPA are listed in Appendix M, and these changes are considered "plan maintenance" actions to provide consistency with law. These text changes will be provided as an addendum to the Record of Decision (ROD) or in subsequent documentation as provided for in the ROD.

Plan maintenance actions resulting from the CDPA fall into two groups. The first group is lands that are no longer under the jurisdiction of the BLM. 3,000,000 acres of public lands previously under the jurisdiction of the BLM were transferred to the National Park Service. All BLM land-use decisions for these lands have been revoked.

The second group is lands still under the jurisdiction of the BLM. In the NEMO Planning Area these include management areas affected by new Park boundaries, lands Congress designated as wilderness or wilderness study areas, remaining lands under wilderness review, lands released from wilderness study status, small ribbons of land (under 500 acres) released from wilderness review and the Mountain Pass/Dinosaur Trackway ACEC. These plan maintenance actions are not addressed further in this document. (See Appendix M)

## 2.7 CALIFORNIA DESERT PROTECTION ACT IMPLEMENTATION: MULTIPLE USE CLASS OF RELEASED WSA'S

Released wilderness study areas total approximately 475,000 acres. Most parcels in the NEMO Planning Area were released wilderness study areas (WSA) recommended as nonsuitable by the Bureau of Land Management (p. 54 of the CDCA Plan). According to the CDCA Plan, if and when released from wilderness consideration, these public lands are to be managed according to the multiple-use class (MUC) originally designated in the Plan. Approximately 460,000 acres are included in this category. (See Table 2-10).

The second category of lands includes four areas totaling approximately 8,300 acres. These four areas (two in Kingston Range, one in Slate Range, and a portion of an area adjacent to Piute Wilderness) were recommended by the BLM as suitable for wilderness to Congress, which Congress chose not to designate as wilderness and chose to release from further wilderness consideration. In this second instance, these lands were designated as MUC controlled under the CDCA Plan. The CDCA Plan (p. 55 of the CDCA Plan as amended by the 1982 Plan Amendments Record of Decision, p. 121) indicated that, if and when released from wilderness consideration, these recommended WSAs should have an interim Multiple-Use Class Limited designation, which they are



managed under pending final determination through the land use planning process. Two alternatives were considered for released lands. The first is No Action, since full consideration was given to parcels during CDCA Plan development. Under this alternative, the MUC of these lands would continue as identified during the CDCA Plan analysis prior to receiving wilderness study area status, and as they have been managed upon their release from wilderness consideration in 1994. For the four areas that were wilderness recommended lands, a continuation of MUC L management and designation as MUC L would occur.

A second alternative is considered if the MUC of the lands around a parcel has been changed by CDCA plan amendment or is proposed for change in this planning document (e.g., desert tortoise DWMAs); or if new information has been compiled, such as for threatened and endangered species, wild & scenic rivers, cultural sites eligible for the National Register, or concerning management of conflicting uses, which would lead to a different conclusion as to the appropriate MUC for a parcel. In these cases, an alternative is proposed for the MUC to be consistent with the MUC of surrounding lands or new information. Otherwise, the MUC of each parcel is already consistent with that of surrounding non-wilderness lands and existing CDCA Plan analysis.<sup>7</sup>

There are also remnant parcels that show up due to Congressional boundary adjustments which are relatively small or long, linear slivers of less than 500 acres each (See Table 2-8). These total less than 10,000 acres. In cases where small acreages or long slivers of public lands were released, the redesignation of each parcel is being addressed as a plan maintenance action under Section 2.6 of this Chapter. Lands would be redesignated consistent with surrounding MUC that is not wilderness.

### **2.7.1 ALTERNATIVE 1 (NO ACTION)**

Continue to manage approximately 475,000 acres of public lands consistent with existing CDCA Plan guidance for lands released from further wilderness review by Congress. All lands that were not recommended by BLM as wilderness would return to their original MUC in the CDCA Plan, and lands recommended by BLM as wilderness would utilize MUC Limited as their final MUC designation. Under this alternative, approximately 315,950 acres would be managed under MUC L guidance and approximately 152,350 acres would be managed under MUC M guidance. Reclassification of all or part of these lands may be revisited at a future date. (Refer to Table 2-9 and 2-10 below and a map reference in Chapter 7, Figure 5a). Additional areas under 500 acres would return to their original MUC under all alternatives (see Table 2-8 for identified areas under 500 acres).

### **2.7.2 ALTERNATIVE 2**

Designate public lands released from further wilderness review by Congress consistent

---

<sup>7</sup> In a few cases, such as the two recommended Kingston Range parcels, surrounding MUC was mixed and there was not a route or other clear feature to use to divide the parcels. This alternative provided for MUC Moderate as an alternative for consideration to the MUC Limited of No Action.



with the CDCA Plan, surrounding lands and new information. This would result in a change in MUC in approximately half the areas, where some or all of the acreage surrounding released lands is different than that identified in the CDCA Plan, or new information has become available. Under this alternative, approximately 401,400 acres would be managed under MUC L guidance and approximately 66,900 acres would be managed under MUC M guidance. Refer to Table 2-9 and 2-10, which follows, and Chapter 7, Figure 5b. In addition, areas under 500 acres would return to their original MUC.

### **2.7.3 PREFERRED ALTERNATIVE**

Same as Alternative 1, No Action, designate MUC based on original CDCA Plan analysis, except in the 11 locations listed in Table 2-9 that are summarized below which would be designated consistent with surrounding lands, as follows (see Chapter 7, Figure 5c for a map of this alternative). Under this alternative, approximately 392,920 acres would be managed under MUC L guidance and approximately 75,380 acres would be managed under MUC M guidance.

- Cerro Gordo (R-7 through R-9 on map). Approximately 21,244 acres in portions of three areas designated as M in 1980 CDCA Plan based on mineral values under this alternative would go to L based on scenic, cultural, and sensitive wildlife issues.
- Surprise Canyon (R-13 on map). Approximately 849 acres is in south half of this released area and was designated as M in 1980 CDCA Plan (eastern part of Middle Park Canyon) based on mineral values. Under this alternative it would go to L based on watershed values, sensitive wildlife, pinyon juniper vegetative community, and scenic values.
- Greenwater (B-1 on map). Approximately 3,000 acres designated as M along northern boundary of released lands in the 1980 CDCA Plan based on mineral values under this alternative would go to L based on raptor, bighorn sheep, Category III desert tortoise habitat, and other wildlife and plant community values.
- Eagle Mountain (B-2 on map). Approximately 15,746.04 acres designated as M in 1980 CDCA Plan based on mineral values under this alternative would go to L based on new T&E and cultural issues.
- East of China Ranch (B-10 on map). Approximately 800 of the 4,009.90 acres was designated as M in the CDCA Plan based on mineral values; under this alternative it would go to L based on watershed, riparian, sensitive species, and scenic values.
- Dumont (B-12 on map). Approximately 17,401.46 acres designated as M based on recreational and mineral values in the CDCA Plan under this alternative would go to L based on prehistoric cultural, riparian, and habitat values and to facilitate access management into the Salt Creek ACEC.



- Boulder Corridor W & E (N-4 and N-5 on the map). Approximately 1,036 acres of Boulder Corridor - West (N-4), within the western end of the Shadow Valley Desert Tortoise DWMA under this alternative would go from M to L. The other 1,554 acres would remain MUC M. Approximately 6,001 acres of Boulder Corridor - East (N-5), in Mesquite Valley at the Nevada border, under this alternative would go from L to M. The other 3,002 acres within the eastern end of the Shadow Valley Desert Tortoise DWMA would remain MUC L.
- Mesquite Springs (N-7). Approximately 18,564 acres designated as M in the CDCA Plan based on recreational and mineral values under this alternative would go to L based on cultural, riparian and scenic values.

In addition, areas under 500 acres would return to their original MUC.

**Table 2-8: Released Lands: Multiple -Use Class of Released WSAs Identified Less than 500 Acres\***

Name	Adjacent MUC	MUC in CDCA
Funeral Mountains	L & Wilderness	L
Sidehill Mine	L & Wilderness	L
Baxter Mine	Wilderness	C (to L now)
Ibex	I & Wilderness	I
Saddle Peak	L & Wilderness	M
Alexander	M & Wilderness	M
Hollow Hills East	L & Wilderness	L
Gunsight	L & Wilderness	L
Alexander	M & Wilderness	M
Copper Queen	L	L
Piper Mountain	L	L
Piper Mountain	L	L
Saline	L	L
Jumbo Mine	L & Wilderness	L

\*Lands under 500 acres will return to their former MUC, except MUC C will return to MUC L. Total acreage for all areas is less than 10,000 acres. This table is not all-inclusive. There are small segments and slivers of released lands that are too small to accurately measure.

**Table 2-9: Released Lands:  
Summary of Alternatives**

Alternative	MUC M	MUC L
1 (No Action)	152,354.77	315,944
2	91,624	376,676
3 (Preferred)	66,626	394,118



Northern & Eastern Mojave Draft Environmental Impact Statement  
Chapter 2: Proposed Actions and Alternatives

**Table 2-10: Released Lands - Multiple-use Class of Released WSAs**

Map Ref #	Name	Acres	Adjacent MUC	1980 CDCA MUC (No Action)	Alt 2	Preferred
R-1	Fish Lake Valley	15,260.15	L, incl. WSA	L	L	L
R-2	Wyman Creek	15,419.57	L, incl. WSA	L	L	L
R-3	Piper Mountain- North	4,201.68	L & C	L	L	L
R-4	Saline Valley*	1162.56	C & M	C (to L now)	M	L
R-5	Inyo Mountains-N*	2,975.82	C & M	L and C (to L now)	L	L
R-6	Inyo Mountains-S	678.62	M	L	M	L
R-7	Cerro Gordo Peak-N	19,046.66	M & C	M&L	M	L
R-8	Cerro Gordo Peak-E	1241.38	C & M	M	M	L
R-9	Cerro Gordo Peak-S	3526.36	M & C	M	M	L
R-10	Argus	606.18	L & C	L	L	L
R-11	Wild Rose Canyon*	9,238.35	L & C	L	L	L
R-12	Surprise*	2,177.93	L & C	L	M	L
R-13	Surprise Canyon*	3,275.64	L & M	L & M	M	L
R-14	Slate Range	53,933.31	L & C	L	L	L
R-15	Manly Peak*	18,663.85	L & C & M	L	M	L
R-16	Slate Range-SE*	4,447.58	L	C (to L now)	L	L
B-1	Greenwater*	34,719.90	M & L	L & M	L	L
B-2	Eagle Mountain	15,746.04	L , M & C	M	L	L
B-3	Stewart Valley	779.55	C & L	L	L	L
B-4	Chicago Valley	2,152.62	L & C	L	L	L
B-5	Pahrump	3,122.11	L & C	L	L	L
B-6	Resting Springs Range*	9,844.69	L & C	L	L	L
B-7	Dublin Hills*	6,581.30	M & C	M	M	M
B-8	Shoshone	9,478.94	L & C	L	L	L
B-9	Sperry Hills*	24,503.73	L , C, & M-small	L	L	L
B-10	East of China Ranch	4,009.90	M, L & C	M & L	L	L
B-11	Avawatz*	31,837.17	M & C (WSA)	M	L	M
B-12	Dumont	17,401.46	L,M, & C (WSA)	M	L	L
B-13	Silurian	20,035.89	M & C	M	L	M
B-14	Hollow Hills North	543.51	M & C	L	M	L
B-15	Baker Northwest	3,066.71	L & C(WSA)	L	L	L
B-16	Baker Northeast	8,170.97	M & C & L-v. small	M	M	M
N-1	Kingston Range-E	1,076.12	M & L	C (to L now)	M	L
N-2	Kingston Range-W	2,169.21	M & L	C (to L now)	M	L
N-3	Mesquite Mountains	1,144.09	L	L	L	L
N-4	Boulder Corridor-W***	2,590.71	M & C	L	M	M & L
N-5	Boulder Corridor-E***	9,003.74	L & C	L	L	M & L
N-6	Piute Wilderness**	5,888.65	L	C (to L now) & L	L	L
N-7	Mesquite Springs**	24,853.28	C & M & L-v. small	M	L	L
N-8	Lava Hills	34,733.12	L & M-v. small	L	L	L
N-9	South Bristol Mountains	38,906.10	L	L	L	L



SUMMARY COMPARISON OF CANDIDATE AMENDMENTS AND ALTERNATIVES			
Establish MUC for 475,000* acres of released WSA's - Multiple use Class Changes of Released Lands			
Alternative 1 (No Action)	Alternative 2	Alternative 3 (Preferred)	
Continue to manage public lands under the CDCA Plan utilizing interim Multiple-Use Class Limited designations on 315,950 acres of public lands released from further wilderness review by Congress and 152,350 acres of public lands designated as Moderate. Reclassification of all or part of these lands may be revisited at a future date.	Consistent with the original CDCA Plan findings, designate 401,400 acres of public lands released from further wilderness review by Congress as Multiple-Use Class Limited and 66,900 acres of public lands as Moderate.	<p>Designated consistent with the original CDCA Plan findings except in the following locations where MUC of lands surrounding have been redesignated and new data substantiate need. 392,920 acres of public lands released from further wilderness review by Congress as Multiple-Use Class Limited and 75,380 acres of public lands as Moderate. Locations where changes have been made:</p> <ul style="list-style-type: none"> <li>• Cerro Gordo (*21,244 acres)</li> <li>• Surprise Canyon (*849 acres)</li> <li>• Greenwater (3,000 acres)</li> <li>• Eagle Mountain (15,746 acres)</li> <li>• East of China Ranch (4,009 acres)</li> <li>• Dumont (17,401 acres)</li> <li>• Boulder Corridor W &amp; E (11,593)</li> <li>• Mesquite Springs (18,564 acres)</li> </ul> <p>MUC M - 75,380 MUC L - 392,920</p>	
MUC M - 152,350 MUC L - 315,950	MUC M - 66,900 MUC L - 401,400		

\* Summary Table does not include MUC breakdown for lands under 500 acres. Total acreage for these areas is less than 10,000 acres.



## 2.8 GREENWATER CANYON ACEC DELETION

About 73 percent of the original Greenwater Canyon ACEC was included in the expansion of Death Valley National Park and is no longer under the jurisdiction of the BLM. The remaining 820 acres of public lands are evaluated under ACEC importance and relevance criteria. (Refer to Chapter 7, Figure 12 for a map of all alternatives)

### 2.8.1 ALTERNATIVE 1 (NO ACTION)

The 820 acres remaining under BLM jurisdiction would continue to be managed as a cultural ACEC, under the existing ACEC management plan. Acreage, maps and text of the ACEC management plan would be amended to exclude approximately 2,160 acres of NPS managed lands from inside the ACEC boundaries, as ACEC is a Bureau of Land Management designation and management tool.

### 2.8.2 ALTERNATIVE 2 (preferred)

The Greenwater Canyon Cultural ACEC would be deleted, and the 820 acres remaining under BLM jurisdiction would no longer be managed as an ACEC. The 820 acres would be managed according to the underlying MUC guidelines for the area, which is MUC Limited.

SUMMARY COMPARISON OF CANDIDATE AMENDMENTS AND ALTERNATIVES	
Greenwater Canyon ACEC Deletion Proposal (Amendment # 9)	
Alternative 1 (No Action)	Alternative 2 (Preferred)
The 820 acres remaining under BLM jurisdiction would continue to be managed as a cultural ACEC, under the existing ACEC management plan.	The Greenwater Canyon Cultural ACEC would be deleted and the 820 acres remaining under BLM jurisdiction would be managed according to MUC Limited guidelines.



## 2.9 ORGANIZED COMPETITIVE VEHICLE EVENTS

The Barstow-to-Vegas (B-to-V) Motorcycle Race Course was established by a 1982 Plan Amendment to the CDCA Plan. The B-to-V course is about 250 miles in length and crosses desert tortoise critical habitat in the West Mojave Desert, Mojave National Preserve and NEMO Planning Area, then crosses into Nevada. Within California, approximately 65 percent of the course is located in critical desert tortoise habitat.

With the creation of the Mojave National Preserve, designation of wilderness and retention of certain WSAs north of I-15, the West-East alignment of the Barstow-to-Vegas course was effectively severed and potential realignment is severely limited. The original course is no longer intact, with 23.4 miles now in the Mojave National Preserve. Alternatives are presented that include no change, deletion of the B-to-V course and all point-to-point competitive speed events outside of OHV open areas and rerouting of the B-to-V course.

Alternatives include no action, deletion, defining an alternate route or setting route criteria for proponents to use for assembling an event proposal. Two of these strategies (a set course and criteria) are not necessarily exclusive of one another. Some of these alternatives may provide for racing opportunities in addition to the Barstow-to-Vegas annual event. Similar amendments are currently being considered in adjacent planning areas to the west (West Mojave) and south (Northern and Eastern Colorado). Criteria were derived from the work of the 1994 Technical Review Team appointed by the Desert Advisory Council to review competitive event issues and develop options to address them.

### 2.9.1 ALTERNATIVE 1 (NO ACTION)

The B-to-V Race Course would remain as delineated on the California Desert Conservation Area Plan Land Use Map<sup>8</sup> and subject to the provisions/stipulations of the CDCA Plan (Refer to Chapter 7, Figure 14 for a map of all alternatives).

This alternative would allow for other point-to-point motorized vehicle events outside of OHV open areas in accordance with the Organized Competitive Vehicle Events section of the Recreation Element of the California Desert Conservation Area Plan as amended.

The CDCA Plan identifies criteria for events that traverse through MUC L lands: "Organized competitive events will be allowed in Multiple-Use Class M and I areas and may be permitted to cross some Multiple-Use Class L areas on "approved vehicle routes of travel" (see Motorized Vehicle Access Element and Part 6, Appendix V to the proposed plan, October 1980)". Because of potentially sensitive resources in Multiple-Use Class L areas, race routes through these areas must comply with the following additional requirements.

---

<sup>8</sup> This alignment is no longer feasible due to the listing of the desert tortoise and establishment of the Mojave National Preserve. These changes in circumstances have made it impossible for the BLM to issue a permit for the race reasonably following the course shown on the California Desert Conservation Area Plan Land-Use Map as amended in 1982. See Findings of Fact and Conclusions of Law June 8, 1990 (U.S. District Court) (SA CV 90-267-JSL)



- (1) All courses will remain on routes of travel that have been "approved" for motorized-vehicle use in MUC L.
- (2) Pit and spectator areas will not be allowed.
- (3) Fragile and/or significant areas will be avoided.
- (4) The BLM will require the event sponsors to mitigate potential negative impacts and may require rehabilitation where feasible.
- (5) All racecourses are temporary and may not be used on a continual basis pending specific resource studies. (See Appendix V to the proposed Plan, October 1980, for further clarification.)
- (6) Long-term adverse impacts will not be allowed.
- (7) Event participants may have to traverse MUC L lands under controlled (yellow flag) conditions (e.g., no passing, timed speeds, maintained roads) as appropriate for resource protection and public safety.
- (8) Length (mileage) of the event passing through MUC L will be a key factor in determining use.
- (9) Width of the course will be the minimum practicable for resource protection and public safety.
- (10) All other alternative routes have been considered.
- (11) All the above criteria in addition to those required by 43 CFR 8372 and BLM Manual 6260.

Until such time as "approved routes of travel" can be identified in MUC L, the passage of vehicles under permit for a competitive event will be confined to paved or maintained roads. For purposes of the Plan "maintained roads" will be defined as "regularly or frequently maintained by continuous use (e.g., passage of vehicles) or machine maintenance." Final determination of regular or frequent maintenance will be by the California Desert District Manager.

All proposals would be subject to site specific evaluation. Conference and consultation with State and Federal wildlife agencies would occur if the proposal might affect listed species.

## 2.9.2 ALTERNATIVE 2

Amend the California Desert Conservation Area Plan to:

- a) Remove delineation of the Barstow-to-Las Vegas Race Course from the Land Use Map of the California Desert Conservation Area Plan, (1980 as amended).
- b) Replace the text in the section titled Organized Competitive Vehicle Events under the Recreation Element of the CDCA Plan with: Competitive vehicle events may only be held in MUC I with an area designation of "Open".
- c) Amend the MUC Guidelines to delete all reference to organized competitive vehicle events in MUC L and M, under recreation.



### 2.9.3 ALTERNATIVE 3

Amend the California Desert Conservation Area Plan to provide for OHV competitive events in the following manner:

- a) Replace the MUC Guidelines and the Recreation Element of the CDCA Plan to include the following criteria for point-to-point motorized vehicle events on all lands outside of Open Areas regardless of the MUC:
  - 1) Events shall be limited to routes designated as open. The race course shall be limited to existing route width.
  - 2) Start areas shall be located on MUC I lands designated as OHV open areas. Finish and spectator areas shall be limited to suitable sites in classes M or I. All pit areas shall be limited to support crews.
  - 3) The event shall not be permitted in wilderness areas, WSAs, ACECs; critical habitat, identified cultural resource sites or districts, riparian areas, and other sensitive areas. The event shall not be permitted on historic trails and roads that are on or eligible for the National Register of Historic Places, designated National Historic Trails or other specially designated trails or routes.
  - 4) Written permission from property owners to cross private property shall be provided to the BLM.
  - 5) Permit stipulations shall be prepared for each event and shall address monitoring activities, reclamation plans, insurance, enforcement, penalties, race course alignment and markings, number of participants (not to exceed 500) and other standard permit requirements.
  - 6) The race shall be managed under timed-start conditions (maximum 100 vehicles per wave), and participation shall be limited to motorcycles and ATVs.
- b) Remove delineation of the B-to-V Race Course from the Land Use Map of the CDCA Plan, (1980 as amended).
- c) Delete the following text from the section titled Organized Competitive Vehicle Events under the Recreation Element of the Plan: ...and one motorcycle race course. (The Barstow-to-Vegas Motorcycle Race Course is established running from Alvord Road to Stateline. See Supplemental information.)



## 2.9.4 ALTERNATIVE 4

This alternative would designate a replacement Barstow-to-Vegas Race Course to allow one event per year that would avoid critical desert tortoise habitat, ACECs, wilderness areas and other sensitive resources consistent with criteria identified in Alternative 3. The alternative alignment (Chapter 7, Figure 14) evaluated follows the Kingston Wash wilderness corridor north of the current alignment. A number of other alignments were considered and dismissed from further consideration because they crossed wilderness or other sensitive areas such as ACECs or critical habitat for listed species.

The additional criteria for point-to-point events outside of open areas would be the same as Alternative 3 except that:

- (1) Where there is no evidence of sensitive resources, the course may be expanded to as much as 100 feet, in specified areas as identified in the permit, at the discretion of the Authorized Officer.
- (2) This alternative would also allow the course to pass through an ACEC on a designated open route provided that the ACEC Management Plan clearly states that the route may be utilized for the named event and all other conditions identified in the ACEC Plan are met.

## 2.9.5 ALTERNATIVE 5 (preferred)

Amend the California Desert Conservation Area Plan to:

- a) Remove delineation of the Barstow-to-Las Vegas Race Course from the Land Use Map of the California Desert Conservation Area Plan, (1980 as amended).
- b) Replace the text in the section titled Organized Competitive Vehicle Events under the Recreation Element of the CDCA Plan with: Competitive vehicle events may only be held in MUC I with an area designation of "Open" or on specified recreation routes which have been delineated and designated in the CDCA Plan.
- c) Amend the MUC Guidelines to delete all reference to organized competitive vehicle events in MUC L and M, under recreation.



## SUMMARY COMPARISON OF CANDIDATE AMENDMENTS AND ALTERNATIVES

### Organized Competitive Vehicle Events

Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5 (Preferred)
<p>The B-to-V Race Course would remain as delineated on the California Desert Conservation Area Plan Land Use Map.</p> <p>This alternative would permit motorized vehicle events outside of open areas in accordance with provisions of the CDCA Plan, as amended. These activities are permitted in MUC Intensive and Moderate areas. Criteria have been identified in the Recreation Element of the CDCA Plan to govern crossing of MUC L lands.</p>	<p>Remove delineation of the Barstow-to-Vegas race course from the Land Use Map of the 1980, California Desert Conservation Area Plan, as amended</p> <p>Amend the Multiple-use Class Guideline to restrict Competitive Vehicle Events to MUC I with an area designation of "Open" (OHV Open Areas)</p>	<p>Replace the MUC Guidelines and the Recreation Element of the CDCA Plan with the following criteria for point-to-point motorized vehicle events on all lands outside of Open Areas:</p> <ul style="list-style-type: none"> <li>Events shall be limited to routes designated as open. The race course shall be limited to existing route width.</li> <li>Start areas shall be located in MUC I. Finish and spectator areas shall be limited to suitable sites in classes M or I. All pit areas shall be limited to support crews.</li> <li>The event shall not be permitted in wilderness areas, WSAs, ACECs; critical habitat, identified cultural resource sites or districts, riparian areas, and other sensitive areas. The event shall not be permitted on historic trails and roads that are on or eligible for the National Register of Historic Places, designated National Historic Trails or other specially designated trails or routes.</li> <li>Written permission from property owners to cross private property shall be provided to the BLM.</li> <li>Permit stipulations shall be prepared for each event and shall address monitoring activities, reclamation plans, insurance, enforcement, penalties, race course alignment and markings, number of participants (not to exceed 500) and other standard permit requirements.</li> <li>The race shall be managed under timed-start conditions (maximum 100 vehicles per wave), and participation shall be limited to motorcycles and ATVs.</li> </ul> <p>Remove delineation of the Barstow-to-Vegas race course from the Land Use Map of the 1980 California Desert Conservation Area Plan, as amended</p> <p>Amend the California Desert Conservation Area Plan to: Delete the following text from the section titled Organized Competitive Vehicle Events under the Recreation Element of the Plan: "...and one motorcycle race course. (The Barstow-to-Vegas Motorcycle Race Course is established running from Alvord Road to Stateline. See Supplemental information.)</p>	<p>Realign the Barstow-to-Vegas race course through the Kingston Wash corridor through wilderness area 36, to avoid the Mojave National Preserve, critical desert tortoise habitat, ACEC's, wilderness areas and other sensitive resource areas. Passage through Multiple-use Class Limited would be under conditions established in the Recreation Element of the CDCA Plan, and the annual event would be limited to timed-starts.</p> <p>The additional criteria for point-to-point events outside of open areas would be the same as Alternative 2 except that:</p> <ul style="list-style-type: none"> <li>Where there is no evidence of sensitive resources, the course may be expanded to as much as 100 feet, in specified areas as identified in the permit, at the discretion of the Authorized Officer. Any other events would have the same limits as Alternative 2.</li> <li>This alternative would also allow the course to pass through an ACEC on a designated open route provided that the ACEC Management Plan clearly states that the route may be utilized for the named event and all other conditions identified in the ACEC Plan are met.</li> </ul>	<p>Amend the California Desert Conservation Area Plan to:</p> <p>a) Remove delineation of the Barstow-to-Las Vegas Race Course from the Land Use Map of the California Desert Conservation Area Plan, (1980 as amended).</p> <p>b) Replace the text in the section titled Organized Competitive Vehicle Events under the Recreation Element of the CDCA Plan with: <u>Competitive vehicle events may only be held in MUC I with an area designation of "Open" or on specified recreation routes which have been delineated and designated in the CDCA Plan.</u></p> <p>c) Amend the MUC Guidelines to delete all reference to organized competitive vehicle events in MUC L and M, under recreation.</p>



## 2.10 MOTOR VEHICLE ACCESS: ROUTES OF TRAVEL DESIGNATION

### Definition of Terms

The CDCA Plan, as amended in 1982, defined route designations as follows:

- **Open Route** – Access on the route by motorized vehicles is allowed.
- **Limited Route** – Access on the route is limited to use by motorized vehicles in one or more of the following ways and limited with respect to:
  1. Number of vehicles allowed;
  2. Types of vehicles allowed;
  3. Time or season of vehicle use;
  4. Permitted or licensed vehicle use only;
  5. Establishment of Speed Limits.

The same exceptions to motorized vehicle use of closed routes also apply to limited routes (see below).

- **Closed Route** – Access on the route by motorized vehicles is prohibited except: (1) fire, military, emergency, or law enforcement vehicles when used for emergency purposes; (2) combat or combat support vehicles when used for national defense purposes; (3) vehicles whose use is expressly authorized by an agency head under a permit, lease, or contract; and (4) vehicles used for official purposes by employees, agents, or designated representatives of the Federal Government or one of its contractors.

In addition to 43 CFR criteria, the following are factors in route designation:

- **Redundant route** - A redundant route is one whose purpose is seemingly identical to that of another route, inclusive of providing the same or very similar recreation opportunities or experiences; and upon designating such a route as "closed," the use thereby redirected to another route or routes would be in accordance with the route designation criteria in 43 CFR 8342.1.
- **Problem route** - A route that once furnished access to a point that now occurs in wilderness (a) could provide access to the boundary of that wilderness area, or (b) has become a management "problem" as motorized access into wilderness has continued and no purpose would be served in establishing a trail head at that point. Existing access to cultural or other sensitive resources may have resulted in degradation of the resources.
- **Non-existent route** - Non-existent routes are defined in the context of the NEMO Plan as routes that are no longer used and have been substantially reclaimed by the forces of nature. Some routes that are delineated on the 1979 CDCA "existing" route inventories and/or the most recent versions of 7.5-minute USGS maps cannot be located due to complete or near-complete natural reclamation.



- **Partially non-existent routes** – Partially non-existent routes are (1) intermittently visible, encouraging cross-country travel at locations where surface evidence of the route disappears and/or (2) although still visible, travel upon them would require the crushing of substantial vegetation due to the degree of reclamation that has already occurred.
- **Maintained road** - The CDCA Plan, as amended, defines a maintained road as “regularly or frequently maintained by continuous use (e.g., passage of vehicles) or machine maintenance.” For determining which routes the BLM will designate in the NEMO Plan, a maintained dirt road is generally one that is maintained periodically with the use of machines (e.g., motorized graders), which is a standard that can be more uniformly applied.
- **Casual use** - Casual use of public lands in the context of motorized-vehicle access is defined as the use of routes not requiring a specific authorization.
- **Authorized use** - Authorized use in such context is the use of routes approved through a permitting process for specific activities (e.g., rights-of-way issued for development of communication sites).

### **General Scope of Route Designation**

Some roads and routes crossing public lands are considered to be part of the primary transportation system of the planning area and will not be addressed in the route designation process. This includes Federal, State, and County paved and maintained roads and major linear rights-of-way or similar authorizations. These roads and routes will be shown on the route designation maps to give an overall view of the transportation network. In addition, route designations apply only to routes and portions thereof on BLM-managed public lands; the designation of routes as “open,” “limited,” and “closed” is not applicable on nonpublic lands. Access for the use and enjoyment of private lands will be addressed on a case-by-case basis where private landowners may be adversely affected by route designation decisions.

Washes as motorized-vehicle routes of travel are addressed in the same manner as non-wash routes, that is, they are individually mapped and either designated “open,” “limited,” or “closed”. The designation of routes as “open,” “limited,” and “closed” is also generally applicable to both casual and authorized users of public lands. However, where there is a requirement for occasional access associated with an authorized use but it is determined that unlimited casual use may cause undesirable resource impacts, routes will be designated “closed” and available for use only by the authorized party. In such circumstances, the authorized use of a “closed” route usually limits this use in some manner or requires mitigation in some form. It is anticipated that BLM will make few “closed” routes available for use by authorized parties, except those within wilderness for which use is strictly defined in the California Desert Protection Act (1994).

### **Inventory**

According to the 1982 CDCA Plan amendment of the Motorized-Vehicle Access Element, an existing route of travel is a route established before approval of the CDCA Plan in 1980 with a minimum width of two feet, and showing significant surface



evidence of prior vehicle use or, for washes, having a history of prior use. Baseline inventory was taken from ICMP “existing” route inventory maps (compiled from 1975 aerial photos, 15-minute USGS maps from 1955-1956 as edited in 1979, with other State and Federal agency maps to provide land status and other sources). These are the inventory maps that were utilized to produce the Desert Access Guides, which include some, but not all, of the routes from these maps.

There were concerns in the initial route designation process that few routes were identified for closure or limitations, that steps needed to be taken to document and prevent route proliferation, and that additional existing ways and trails needed to be identified and mapped.

In the NEMO effort, the inventory from 1979 was supplemented with updated USGS topographical maps, route location field data that was collected beginning in 1993 with a full-time volunteer along with Needles Field Office staff, and supplemental public input from 1998-1999. NEMO route designation scoping meetings and follow-up field visits with staff of the field office to Piute-Fenner DWMA were held during 1998, and private landowners, user and interest groups were given the opportunity to review and comment on early route recommendations and provide additional input. The overall objective of this effort was to drive all routes within the planning area and record their locations. Routes not on the 1979 inventory of “existing” routes may be considered for addition to the inventory, consistent with MUC and CDCA Plan guidance.

To date, “existing” routes in all Category I, II and critical desert tortoise habitat have been field checked and mapped for the NEMO Plan. This covers approximately 350,000 acres of land in the southern 30 percent of the planning area that is not designated as wilderness or wilderness study area. In addition, routes have been previously inventoried, field checked, mapped and analyzed in a few of the larger ACECs, such as the Amargosa and Grimshaw Lake Natural Area ACECs, and the nearby Salt Creek ACEC, in conjunction with ACEC management planning from the early 1980’s.

### **Route Designation Criteria**

Five criteria are identified in 43 CFR 8342.2 to consider when making area and route-specific designation decisions, including:

1. Minimize damage to soil, watershed, vegetation, air, or other resources, and prevention of impairment of wilderness suitability.
2. Minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protect endangered or threatened species and their habitats.
3. Minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.
4. No trails will be located in designated wilderness or primitive areas.



5. Routes designated in natural areas must not adversely affect natural, esthetic, scenic, or other values for which the areas were established.

Applying “location-specific” criteria occasionally leads to the designation of an entire route as “closed” rather than limiting the closure to a portion of the route. Such broadening of the parameters in this manner is generally based on judgments regarding potential for manageability. Conversely, in light of judgments regarding maintenance of a viable route network and, again, potential for manageability, routes occurring within the prescribed distance as specified by the natural resource parameters (five criteria above) are occasionally designated “open” or “limited.”

### **Scope of Route Designation in the NEMO Planning Area**

Route designations are not appropriate in Congressionally-designated wilderness areas, nor in wilderness study areas where Congress has not yet determined whether lands should be designated as wilderness or should be released. For the remainder of public land routes, “open”, “limited”, and “closed” route designations may be made in each of the Multiple-Use Classes, including Areas of Critical Environmental Concern (ACECs), and in unclassified lands. This covers approximately 1.2 million acres in the NEMO Planning Area.

Approximately 30 percent of the 1.2 million acres where route designation is needed will be designated in this planning effort. BLM will make the designation of the remaining route network a priority in areas where protection and recovery of T&E species is the goal, through supplemental route designation or new efforts in conjunction with follow-up surveys and ACEC planning. These areas are currently or are proposed as MUC “L” and ACECs in the NEMO planning effort.

General priorities for completion and implementation of route designation in the remainder of the planning area are:

- (1st) areas which are identified for the protection and enhancement of T&E and sensitive species, areas which have high sensitivity for cultural resources, and designated special areas (e.g., ACECs);
- (2nd) areas which may affect access to wilderness;
- (3rd) areas which are identified for the protection and enhancement of watershed or public land health values,
- (4th) MUC “L” or “I” areas,
- (5th) MUC “M” areas,
- (6th) other public lands.

Secondly, the BLM, California Desert District has evaluated the route designation process, and developed a proposal to simplify it. This proposal eliminates the “existing” route network approach that is currently used in some MUC within the CDCA, which are based on a database that is twenty-two years old where that database exists, and replaces it with the same route network process used within MUC “L” for route designation. With a consistent and simple approach to route designation, the designation of routes in MUC



“M” and “I” outside of OHV open areas can proceed efficiently based on established priorities. These route network and route-specific designations will be pursued by each field office through the land-use planning process as site-specific analyses are completed and public input provided, consistent with the CDCA Plan, as amended.

### **Route Specific NEPA Documentation**

The EIS prepared for the NEMO Plan constitutes NEPA documentation for designating routes of travel. Detailed maps at the 1:24,000 scale depicting routes and their proposed designations are available for review at the appropriate local offices (Needles, Ridgecrest, and Barstow) Field Offices, and the California Desert District Office in Riverside.

### **Implementation of Route Designation Decisions**

- Routes comprising a basic recreational access network within the NEMO planning area would be individually signed in such a way as to best signify their availability for use. This basic network is based on specific recreational touring routes for the NEMO planning area, as they are designated. Signing strategies may vary to reflect site-specific needs, particularly in special management areas such as DWMAs.
- Information kiosks depicting the basic recreational access network would be installed at key locations throughout the NEMO planning area. These kiosks would furnish information relating to access opportunities and limitations, resource protection, and visitor safety.
- Printed media (e.g., maps, brochures, etc.) depicting the basic recreational access network would be developed and distributed to the public. Information provided would be similar to that on the kiosks, but would likely be more comprehensive as space allows.
- Routes designated “closed” would be appropriately signed, barricaded, or rehabilitated as necessary to exclude access and allow the forces of nature to obliterate them, except where limited use is important to achieve resource management objectives (e.g., maintenance of small game guzzlers to support wildlife populations). In such cases, access would be controlled to exclude casual use by the general public yet allow continued administrative use.
- Decision to sign routes that are not included in the basic recreational access network but that are available for motorized-vehicle use (i.e., they have not been designated “closed”) would be based on need to minimize resource conflicts. They would not be depicted on informational kiosks.

The intent of this strategy is (1) to provide off-highway vehicle recreationists, especially novices, with well-defined, signed routes on which to explore the desert, and (2) to direct use to a limited number of primary routes, thereby decreasing use throughout the network of secondary routes. In general, it is anticipated that the identified primary routes will better accommodate higher levels of use with lower potential for adverse impacts to resource values than the secondary routes.



### 2.10.1 ALTERNATIVE 1 (NO ACTION)

Designate routes in accordance with criteria in 43 CFR 8342.1.<sup>9</sup> Route designation would remain subject to the existing provisions/stipulations of the CDCA Plan. This includes different MUC Guidelines for selection of specific routes to be included in an approved routes of travel network. (See page 77 of the CDCA Plan, as amended March 1999 for MUC I, M, L and C guidelines). Desert washes, as motorized-vehicle routes of travel, are addressed in the same manner as non-wash routes; that is, they are individually mapped and, depending upon the Multiple-Use Class in which they occur, navigable washes are designated under “existing” or “approved” guidelines identified in the Plan, as either “open”, “closed” or “limited”.

- Designate “existing” routes under appropriate guidelines in MUC L and M areas, including navigable washes, that have been individually identified (1979 maps<sup>10</sup>) “open” for motor-vehicle use except where such use has already been limited or prohibited through publication of a final notice in the *Federal Register*.
- Three routes totalling 11 miles in length closed through the initial route designation process in 1979, two in Shadow Valley and one in Northern Ivanpah, would be designated as “closed” for motor-vehicle use.
- Two routes totalling 6.0 miles in length that were closed through Federal Register Notice in FY 87 to protect Amargosa niterwort populations would be designated as “closed” for motor-vehicle use (Barstow Resource Area, 1987 Route Designation Maps – Map C, Route(s) C-1 and C-2) used for preparation of Desert Access Guides. These maps are available for review at the Barstow Field Office.

The following are not included as routes of travel and would be designated as “closed”:

- Routes that are non-existent or partially non-existent as verified by field review during this planning effort, although they appeared on the 1979 inventory maps utilized to prepare the Desert Access Guides, or were found on current USGS topographical maps of the area. Where a portion of the route connects to other routes that is not declared to be a non-existent route, only the non-existent route portion would be closed under this alternative.
- Routes that are within designated wilderness areas.

### 2.10.2 ALTERNATIVE 2

Designate routes in accordance with criteria in 43 CFR 8342.1. Route designation would remain subject to the provisions/stipulations of the CDCA Plan as amended below. Desert washes, as motorized-vehicle routes of travel, are addressed in the same manner as non-wash routes; that is, they are individually mapped and, depending upon the multiple-use class in which they occur, navigable washes are designated under “existing” or “approved” guidelines identified in the Plan, as either “open”, “closed” or “limited”.

<sup>9</sup> Route designations approved through the NEMO Plan constitute CDCA Plan decisions.

<sup>10</sup> These maps are on file in the Field Offices. The original maps are very fragile.



- Amend the CDCA Plan Motorized-Vehicle Access Element to designate and manage routes of travel in accordance with MUC Limited guidelines irrespective of Multiple-Use Class, except in MUC "C" (Wilderness) and in areas designated "Open" for vehicle use.
- Designate "existing" routes, including navigable washes, that have been individually identified (per 1979 maps) "open" for motor-vehicle use with the following exceptions:
  - Where such use has already been limited or prohibited through publication of a final notice in the *Federal Register*, including:
    - \* Two routes (6 miles) that were closed through Federal Register Notice in Fiscal Year 87 to protect Amargosa niterwort populations, which would be designated as "closed" for motor-vehicle use.
  - Where conflicts with other uses have resulted in recommendation for closure or limitation under 43 CFR 8342.1 criteria, including but not limited to:
    - \* Close or seasonally limit any route within 1/4 mile of any significant bat roost.
    - \* Close any route within 1/4 mile of prairie falcon and golden eagle aeries (cliff nests).
    - \* Close any route within 1/4 mile of a site of known occurrence of current or future listed T&E plant populations.
    - \* Close any route within 1/4 mile of a natural or artificial water source (e.g., springs, seeps, streams, guzzlers).
    - \* Close or seasonally limit washes, including navigable washes that do not contribute to the primary transportation network.
    - \* Close any route within 1/4 mile of a significant sacred site or cultural resource that may be impacted or lost.
    - \* Close, seasonally limit, or upgrade routes with significant erosion and degradation potential.
    - \* Develop criteria for each special area to protect sensitive resources therein.
  - Redundant routes (see definition of terms at the beginning of section 2.10).
- In addition, non-existent and wilderness routes not included and designated as "closed" would be the same as Alternative 1 (No Action)
- In addition to the above general exceptions, in the Desert Tortoise DWMA's, routes would be designated "open" for motor-vehicle use with the following additional exceptions:
  - Three routes (11 miles) that were closed through the initial route designation process in 1979, two in Shadow Valley and one in Northern Ivanpah, would be designated as "closed" for motor-vehicle use.
  - Routes where specific biological parameters proposed under this alternative are applied to meet desert tortoise DWMA goals and objectives (see appendix A), shall be designated "closed" or "limited" as appropriate.
  - Under this alternative, all wash routes that are not part of the primary transportation network would be designated closed in desert tortoise DWMA's.



### 2.10.3 ALTERNATIVE 3

Designate routes in accordance with criteria in 43 CFR 8342.1.

- Amend the CDCA Plan Motorized-Vehicle Access Element to designate and manage routes of travel in accordance with MUC Limited guidelines irrespective of Multiple-Use Class, except in MUC "C" (Wilderness) and in areas designated "Open" for vehicle use.
- Designate "existing" routes, including navigable washes, that have been individually identified (1979 maps) "open" for motor-vehicle use with the same exceptions as Alternative 2, with the following modification: Evaluate existing washes as potential routes, including navigable washes, on a case-by-case basis, based on their contribution to the primary transportation network and providing access to specific recreational destinations, consistent with criteria, rather than closing or seasonally limiting washes that do not contribute to the primary transportation network.
- In addition, non-existent and wilderness routes not included and designated as "closed" would be the same as Alternative 1 (No Action).
- In addition to the general exceptions, in the Desert Tortoise DWMAs, routes would be designated "open" for motor-vehicle use with the following additional exceptions:
  - Three routes (11 miles) that were closed through the initial route designation process in 1979, two in Shadow Valley and one in Northern Ivanpah, would be designated as "closed" for motor-vehicle use.
  - Routes where specific biological parameters proposed under this alternative are applied to meet desert tortoise DWMA goals and objectives (see appendix A), shall be designated "closed" or "limited" as appropriate.

### 2.10.4 ALTERNATIVE 4

Designate routes in accordance with criteria in 43 CFR 8342.1.

- Amend the CDCA Plan Motorized-Vehicle Access Element to designate and manage routes of travel in accordance with MUC Limited guidelines irrespective of Multiple-Use Class, except in MUC "C" (Wilderness) and in areas designated "Open" for vehicle use.
- Designate "existing" routes, including navigable washes, that have been individually identified (see 1979 maps) "open" for motor-vehicle use, the same as Alternative 2, with the following exceptions:
  - Address existing washes, including navigable washes, on a case-by-case basis and evaluate them based on the primary transportation network and access to specific recreational destinations, consistent with criteria (same as Alt 3).
  - Routes would not be considered for "closure" based on being defined as redundant routes in MUC "Moderate" or "Intensive"
- In addition to the above general exceptions, in the Desert Tortoise DWMAs, routes will be designated "open" for motor-vehicle use with the following additional



exceptions:

- Three routes (11 miles) that were closed through the initial route designation process in 1979, two in Shadow Valley and one in Northern Ivanpah, would be designated as “closed” for motor-vehicle use.
- Routes where specific biological parameters proposed under this alternative are applied to meet desert tortoise DWMA goals and objectives (see appendix A), shall be designated “closed” or “limited” as appropriate.

## **2.10.5 ALTERNATIVE 5 (Preferred)**

This alternative is the same as Alternative 3.



## SUMMARY COMPARISON OF CANDIDATE AMENDMENTS AND ALTERNATIVES

### Motorized Vehicle Access: Routes of Travel Designation

Alternative 1 (No Action)	Alternative 2	Alternative 3	Alternative 4	Alternative 5 (Preferred)
<p>Designate routes in accordance with criteria in 43 CFR 8342.1.<sup>11</sup> Route designation would remain subject to the provisions/stipulations of the CDCA Plan. Desert washes, as motorized-vehicle routes of travel, are addressed in the same manner as non-wash routes; that is, they are individually mapped and, depending upon the multiple-use class in which they occur, navigable washes are designated under "existing" or "approved" guidelines identified in the Plan, as either "open", "closed" or "limited".</p> <ul style="list-style-type: none"> <li>Amend the CDCA Plan Motorized-Vehicle Access Element to designate and manage routes of travel in accordance with MUC Limited guidelines irrespective of Multiple-Use Class, except in MUC "C" (Wilderness) and in areas designated "Open" for vehicle use.</li> <li>Designate "existing" routes, including navigable washes, that have been individually identified (1979 maps) "open" for motor-vehicle use with the following exceptions: <ul style="list-style-type: none"> <li>Where such use has already been limited or prohibited through publication of a final notice in the <i>Federal Register</i>.</li> <li>Where conflicts with other uses have resulted in recommendation for closure or limitation under 43 CFR 8342.1 criteria, including but not limited to: <ul style="list-style-type: none"> <li>*Close or seasonally limit any route within 1/4 mile of any significant bat roost.</li> <li>*Close any route within 1/4 mile of prairie falcon and golden eagle eyries (cliff nests).</li> <li>*Close any route within 1/4 mile of a site of known occurrence of current or future listed T&amp;E plant populations.</li> <li>*Close any route within 1/4 mile of a natural or artificial water source (e.g., springs, seeps, streams, guzzlers).</li> <li>*Close or seasonally limit washes, including navigable washes that do not contribute to the primary transportation network.</li> <li>*Close any route within 1/4 mile of a significant sacred site or cultural resource that may be impacted or lost.</li> <li>*Close, seasonally limit, or upgrade routes with significant erosion and degradation potential.</li> <li>*Develop criteria for each special area to protect sensitive resources therein.</li> </ul> </li> </ul> </li> </ul> <p>Redundant routes (see definition of terms at the beginning of section</p>	<p>Designate routes in accordance with criteria in 43 CFR 8342.1. Route designation would remain subject to the provisions/stipulations of the CDCA Plan as amended below. Desert washes, as motorized-vehicle routes of travel, are addressed in the same manner as non-wash routes; that is, they are individually mapped and, depending upon the multiple-use class in which they occur, navigable washes are designated under "existing" or "approved" guidelines identified in the Plan, as either "open", "closed" or "limited".</p> <ul style="list-style-type: none"> <li>Amend the CDCA Plan Motorized-Vehicle Access Element to designate and manage routes of travel in accordance with MUC Limited guidelines irrespective of Multiple-Use Class, except in MUC "C" (Wilderness) and in areas designated "Open" for vehicle use.</li> <li>Designate "existing" routes, including navigable washes, that have been individually identified (1979 maps) "open" for motor-vehicle use with the following exceptions: <ul style="list-style-type: none"> <li>Where such use has already been limited or prohibited through publication of a final notice in the <i>Federal Register</i>.</li> <li>Where conflicts with other uses have resulted in recommendation for closure or limitation under 43 CFR 8342.1 criteria, including but not limited to: <ul style="list-style-type: none"> <li>*Close or seasonally limit any route within 1/4 mile of any significant bat roost.</li> <li>*Close any route within 1/4 mile of prairie falcon and golden eagle eyries (cliff nests).</li> <li>*Close any route within 1/4 mile of a site of known occurrence of current or future listed T&amp;E plant populations.</li> <li>*Close any route within 1/4 mile of a natural or artificial water source (e.g., springs, seeps, streams, guzzlers).</li> <li>*Close or seasonally limit washes, including navigable washes that do not contribute to the primary transportation network.</li> <li>*Close any route within 1/4 mile of a significant sacred site or cultural resource that may be impacted or lost.</li> <li>*Close, seasonally limit, or upgrade routes with significant erosion and degradation potential.</li> <li>*Develop criteria for each special area to protect sensitive resources therein.</li> </ul> </li> </ul> </li> </ul> <p>Redundant routes (see definition of terms at the beginning of section</p>	<p>Designate routes in accordance with criteria in 43 CFR 8342.1.</p> <ul style="list-style-type: none"> <li>Amend the CDCA Plan Motorized-Vehicle Access Element to designate and manage routes of travel in accordance with MUC Limited guidelines irrespective of Multiple-Use Class, except in MUC "C" (Wilderness) and in areas designated "Open" for vehicle use.</li> <li>Designate "existing" routes, including navigable washes, that have been individually identified (1979 maps) "open" for motor-vehicle use with the same exceptions as Alternative 2, with the following exceptions: <ul style="list-style-type: none"> <li>Address existing washes, including navigable washes, on a case-by-case basis and evaluate them based on the primary transportation network and access to specific recreational destinations, consistent with criteria.</li> <li>Routes would not be considered for "closure" based on being defined as redundant routes in MUC "Moderate" or "Intensive".</li> </ul> </li> <li>In addition to the above general exceptions, in the Desert Tortoise DWMA's, routes would be designated "open" for motor-vehicle use with the following additional exceptions: <ul style="list-style-type: none"> <li>Three routes that were</li> </ul> </li> </ul>	<p>Designate routes in accordance with criteria in 43 CFR 8342.1.</p> <ul style="list-style-type: none"> <li>Amend the CDCA Plan Motorized-Vehicle Access Element to designate and manage routes of travel in accordance with MUC Limited guidelines irrespective of Multiple-Use Class, except in MUC "C" (Wilderness) and in areas designated "Open" for vehicle use.</li> <li>Designate "existing" routes, including navigable washes, that have been individually identified (1979 maps) "open" for motor-vehicle use with the same exceptions as Alternative 2, with the following exceptions: <ul style="list-style-type: none"> <li>Address existing washes, including navigable washes, on a case-by-case basis and evaluate them based on the primary transportation network and access to specific recreational destinations, consistent with criteria.</li> <li>Routes would not be considered for "closure" based on being defined as redundant routes in MUC "Moderate" or "Intensive".</li> </ul> </li> <li>In addition to the above general exceptions, in the Desert Tortoise DWMA's, routes would be designated "open" for motor-vehicle use with the following additional exceptions: <ul style="list-style-type: none"> <li>Three routes that were</li> </ul> </li> </ul>	<p>Same as Alternative 3.</p>

<sup>11</sup> Route designations approved through the NEMO Plan constitute CDCA Plan decisions.

<sup>12</sup> These maps are on file in the Field Offices. The original maps are very fragile.



Northern & Eastern Mojave Draft Environmental Impact Statement  
Chapter 2: Proposed Actions and Alternatives

SUMMARY COMPARISON OF CANDIDATE AMENDMENTS AND ALTERNATIVES				
Motorized Vehicle Access: Routes of Travel Designation				
Alternative 1 (No Action)	Alternative 2	Alternative 3	Alternative 4	Alternative 5 (Preferred)
<ul style="list-style-type: none"> <li>Routes that are non-existent or partially non-existent as verified by field review during this planning effort, although they appeared on the 1979 inventory maps utilized to prepare the Desert Access Guides, or were found on current USGS topographical maps of the area. Where a portion of the route connects to other routes that is not declared to be a non-existent route, only the non-existent route portion would be closed under this alternative.</li> <li>Routes that are within designated wilderness areas.</li> </ul>	<p>2.10).</p> <ul style="list-style-type: none"> <li>In addition to the above general exceptions, in the Desert Tortoise DWMAs, routes would be designated "open" for motor-vehicle use with the following additional exceptions:               <ul style="list-style-type: none"> <li>Three routes that were closed through the initial route designation process in 1979, two in Shadow Valley and one in Northern Ivanpah, would be designated as "closed" for motor-vehicle use.</li> <li>Routes where specific biological parameters proposed under this alternative are applied to meet desert tortoise DWMA goals and objectives (see appendix A), shall be designated "closed" or "limited" as appropriate.</li> <li>Under this alternative, all wash routes that are not part of the primary transportation network would be designated closed in desert tortoise DWMAs.</li> </ul> </li> <li>In addition, non-existent and wilderness routes not included and designated as "closed" would be the same as Alternative 1 (No Action)</li> </ul>	<p>closed through the initial route designation process in 1979, two in Shadow Valley and one in Northern Ivanpah, would be designated as "closed" for motor-vehicle use.</p> <ul style="list-style-type: none"> <li>Routes where specific biological parameters proposed under this alternative are applied to meet desert tortoise DWMA goals and objectives (see appendix A), shall be designated "closed" or "limited" as appropriate.</li> <li>In addition, non-existent and wilderness routes not included and designated as "closed" would be the same as Alternative 1 (No Action)</li> </ul>	<p>routes would be designated "open" for motor-vehicle use with the following additional exceptions:</p> <ul style="list-style-type: none"> <li>Three routes that were closed through the initial route designation process in 1979, two in Shadow Valley and one in Northern Ivanpah, would be designated as "closed" for motor-vehicle use.</li> <li>Routes where specific biological parameters proposed under this alternative are applied to meet desert tortoise DWMA goals and objectives (see appendix A), shall be designated "closed" or "limited" as appropriate.</li> </ul>	



## 2.11 LANDFILLS

The alternatives identified in this planning effort provide strategies to implement the BLM's policies on elimination of solid waste landfills. Under current policy, BLM may allow existing solid waste landfills in the Planning Area to operate so long as adequate progress towards closure or patent of the facilities is being made. Closure of existing landfills under State supervision is a process that can take decades and involves development and implementation of a monitoring and formal closure program.

The range of alternatives includes patenting of the existing landfill sites in the NEMO Planning Area to the County of Inyo. Closure of the facilities was considered and dismissed as not providing substantially fewer environmental impacts to the public lands, which have already been utilized for solid waste disposal and have already incurred impacts from that disposal. Closure would result in higher costs to the County over a shorter timeframe and may not meet short-term solid waste disposal needs of area residents.

### 2.11.1 ALTERNATIVE 1 (NO ACTION)

Continue to manage 29.4 acres of public lands, which includes the former and current Tecopa community landfill, and 50 acres of public lands, which includes the former and current Shoshone community landfill, using the existing MUC Limited guidelines. Close facilities and retain Federal ownership. Begin the formal closure process on Tecopa and Shoshone community landfills under the State of California guidance.

### 2.11.2 ALTERNATIVE 2 (PREFERRED)

Redesignate Tecopa and Shoshone community landfill sites from MUC Limited to Unclassified to facilitate conveyance out of Federal ownership to the County of Inyo.

Tecopa Landfill MUC Change L to U for 29.4 acres		
Alternative 1 (No Action)	Alternative 2	Preferred
Continue to manage 29.4 acres of public lands, which includes the former and current Tecopa community landfill, using the existing MUC Limited guidelines. Close facilities and retain Federal ownership.	On 29.4 acres encumbered by the former and current Tecopa community landfill site, public lands would be redesignated from MUC Limited to Unclassified to facilitate conveyance out of Federal ownership to the County of Inyo.	Alternative 2.
Shoshone Landfill Change MUC L to U for 50 acres		
Continue to manage 50 acres of public lands, which includes the former and current Shoshone community landfill, using the existing MUC Limited guidelines. Close facilities and retain Federal ownership.	On 50 acres encumbered by the former and current Shoshone community landfill site, public lands would be redesignated from MUC Limited to Unclassified to facilitate conveyance out of Federal ownership to the County of Inyo.	Alternative 2.



## 2.12 WILD AND SCENIC RIVER ELIGIBILITY

Federal agencies such as the Bureau of Land Management (BLM) have been mandated to evaluate potential additions to the National Wild and Scenic River System (NWSRS) per Section 5(d) of the Wild and Scenic Rivers Act of 1968 (16 United States Code 1271-1287, *et seq.*). Title 36 of the Code of Federal Regulations (CFR), Subpart 297, addresses management of Wild and Scenic Rivers. Title 43 CFR, Subpart 8350, specifically addresses designation of management areas. NWSRS study guidelines have also been published in Federal Register Volume 7, Number 173 (September 7, 1982), for public lands managed by the U.S. Departments of Agriculture and Interior. Additional guidance on wild and scenic rivers (WSR) is provided in BLM Manual 8351.

The NWSRS study process includes three regulatory steps:

1. Identification of what river(s) and/or river segment(s) are eligible for WSR designation;
2. Determination of eligible river(s) and/or segment(s) potential classification with respect to wild, scenic, recreational designation, or any combination thereof; and
3. Conducting a suitability study of eligible river(s) and/or segment(s) for inclusion into the NWSRS, via legislative action. An environmental impact statement (EIS) is commonly prepared to document the analysis needed for this suitability determination/WSR designation.

Any river or river segment on public lands found eligible for inclusion in the NWSRS is to be managed as if this river/segment were designated, until such time as a suitability determination is made. This requires management of public lands within 0.25 mile of the subject river/segment, to conform to management standards and guidelines presented in applicable Federal agency manuals for wild and scenic rivers until the suitability determination is completed.

If a river or river segment is found suitable for inclusion to the NWSRS, the U.S. Congress must then pass legislation so designating this river/segment, prior to its formal addition to the NWSRS. In addition to Federal agencies, private individuals and/or groups, as well as State governments, can nominate rivers and/or segments for inclusion.

The first two steps, i.e., eligibility and classification, are documented in this report, covering portions of three different streams within the planning area, and the impacts evaluated in the NEMO Environmental Impact Statement. The remaining suitability determinations would be completed subsequently, and analyzed in an EIS format. The results of the suitability determinations would amend the applicable land use plan, i.e., the California Desert Conservation Area (CDCA) Plan (BLM 1980, as amended). Refer to Appendix O for eligibility and classification of three segments of the Amargosa River, Appendix S for eligibility and classification of one segment of Cottonwood Creek, and Appendix T for eligibility and classification of two segments of Surprise Canyon.



## 2.13 CONSIDERED BUT DISMISSED FROM FURTHER ANALYSIS

Additional alternatives were considered but dismissed from further analysis in this planning effort for a variety of reasons. Following is a review of some of the alternatives receiving the most discussion.

Regional standards of public land health are to be developed in consultation with local Resource Advisory Councils (43 CFR 4181). BLM in consultation with California Desert District Advisory Council developed the standards and guidelines presented in Section 2.1.2, Alternative 2. They are similar to those developed by Resource Advisory Councils in other regions and consistent with the regulatory parameters for development of regional guidelines; therefore other alternatives are not considered.

For desert tortoise recovery, an alternative to withdraw one or more areas from mineral entry was considered. The desert tortoise Recovery Plan recommended withdrawal of Ivanpah Valley. Withdrawal was dismissed because the cumulative surface disturbance limitation within the desert tortoise Desert Wildlife Management Areas (DWMAs) effectively addresses the issue. In addition, the DWMAs do not contain high mineral potential, except for sand and gravel which is a common variety mineral.

A grazing management alternative was considered but dismissed that would have prohibited cattle feeding supplements (i.e., protein, nitrogen, and energy) in the DWMAs. However, use of supplements is such an integral and vital part of cattle ranching on open rangelands that elimination of feeding supplements would end grazing operations in DWMAs, an option that is already addressed in Alternative 2 for desert tortoise recovery.

An alternative that restricts parking and camping distance to 15 feet from route centerline was considered but dismissed. This distance was used in the Las Vegas Resource Management Plan immediately adjacent to the proposed Piute Valley ACEC.

Recreational use in Nevada is higher due to its closer proximity to Las Vegas than in the NEMO Planning Area, where use is generally low. The BLM intends to establish one standard for general public vehicular access within DWMAs throughout the CDCA in order to ease public education and compliance in the California Desert. Therefore, the NEMO planning effort identified a range of alternatives consistent with other planning efforts in the CDCA for general vehicular access. Site-specific issues can be identified and addressed in each ACEC as needed.

An alternative for Amargosa vole and T&E plant recovery was considered but dismissed that would have designated the recovery areas as wildlife habitat management areas (WHMAs) instead of ACECs. This alternative was dismissed because the habitat management plans would not override MUC guidelines and, hence, would not be effective in limiting the effects of conflicting activities.

An additional alternative for T&E plant recovery at Carson Slough was considered and dismissed that would have used the existing Salt and Brackish Water Marsh Unusual



Plant Assemblage to define the boundaries of the ACEC. It was dismissed from further analysis because the UPA boundaries were based on different resource values than the listed plants that are the focus of the ACEC protection strategies proposed.

Under the California Desert Protection Act (CDPA), portions of four ACECs had acreage transferred to the National Park Service. For three of these ACECs (Clark Mountain, Saline Valley, and Surprise Canyon), alternatives were considered and dismissed from further analysis that would have deleted the ACECs if the remaining areas did not still meet ACEC importance and relevance criteria. The fourth is Greenwater Canyon ACEC, and it is proposed for deletion in this document.

Another CDPA provision released from wilderness consideration approximately 45 measurable parcels of public lands that had been portions of wilderness study areas. The multiple-use class is being established on all of these parcels in this planning effort. In addition, one of these areas, located in the Southern Panamints adjacent to Death Valley National Park and Fort Irwin National Training Center, was given preliminary ACEC consideration. Sufficient data does not exist to establish importance and relevance criteria at this time, so this ACEC proposal was dismissed from further consideration.

Public input was provided during scoping for consideration of all wash routes for “limited” access to be provided during fall hunting season. This strategy is inconsistent with the route-by-route designation strategy required in the CDCA Plan and would present specific conflicts with T&E species conservation and recovery. Within DWMAs, the first consideration for all washes is their suitability and value as desert tortoise habitat. Washes that have conventionally been used as routes of travel on a regular basis and/or do not meet criteria as suitable and valuable desert tortoise habitat received further field survey in the DWMAs to determine whether they provided a primary recreational access linkage in the route network. Although, the alternative suggested during scoping was not considered further for analysis, individual wash routes may be considered for a specific designation under most alternatives through the NEMO or subsequent land-use planning process, to address the concerns identified.



Summary of Impacts - Standards and Guidelines		
Resources	Alternative 1 (No Action)	Alternative 2 (Preferred)
<b>Vegetation</b>	<ul style="list-style-type: none"> <li>The growing period is expected to increase for perennial forage species.</li> <li>Long-term increase in perennial plants adjacent to range improvements.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts are similar to the No Action Alternative. The same benefits in grazing allotments are expected on all public lands.</li> </ul>
T&E Plants	<ul style="list-style-type: none"> <li>Population of T&amp;E plants will benefit similarly to other vegetation</li> </ul>	<ul style="list-style-type: none"> <li>See vegetation above for impacts.</li> </ul>
Noxious weeds	<ul style="list-style-type: none"> <li>Substantial decrease in specific noxious weeds that respond to management techniques.</li> </ul>	<ul style="list-style-type: none"> <li>See vegetation above for impacts.</li> </ul>
Wetlands & Riparian & Floodplains	<ul style="list-style-type: none"> <li>Riparian species at certain spring sources within the Last Chance and South Oasis Allotments would improve to meet properly functioning conditions.</li> <li>Continued overall riparian wetland condition improvement within allotments.</li> </ul>	<ul style="list-style-type: none"> <li>See vegetation above for impacts.</li> </ul>
<b>Wildlife</b>	<ul style="list-style-type: none"> <li>Increases in plant vigor, biomass, and seed production will provide increased food sources.</li> <li>Increases in plant cover and litter will provide increased shelter against weather and predation.</li> <li>Improvements in structure, diversity and size of riparian habitats will be especially effective in increasing animal diversity and sustaining migratory bird populations.</li> </ul>	<ul style="list-style-type: none"> <li>Guidelines are stronger and more definitive in Alternative 2, greater benefits for wildlife communities can be expected and over a wider geographic area to cover all public lands.</li> </ul>
T&E	<ul style="list-style-type: none"> <li>See above wildlife impacts</li> </ul>	<ul style="list-style-type: none"> <li>See above wildlife impacts</li> </ul>
Existing ACECs	<ul style="list-style-type: none"> <li>See above wildlife impacts</li> </ul>	<ul style="list-style-type: none"> <li>See above wildlife impacts</li> </ul>
<b>Soil, Water, Air</b>	<ul style="list-style-type: none"> <li>Reduced erosion rates due to modified grazing practices.</li> <li>Small reductions in particulate (PM<sub>10</sub>) emissions could result from better vegetative cover and reduced wind erosion within grazing allotments that are not meeting standards.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alternative 1 except benefits from regional standards would cover all public lands.</li> </ul>
Water Quality/ Quantity	<ul style="list-style-type: none"> <li>Will reduce sedimentation and increase infiltration rates.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Alternative 1 but greater benefits to water quality can be expected based on more definitive guidelines</li> </ul>
<b>Wilderness &amp; Visual</b>	<ul style="list-style-type: none"> <li>Managing ecosystem health in accordance with S&amp;Gs will generally benefit wilderness</li> <li>Site-specific "minimum tool analysis" would occur for all projects.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alternative 1 but covers all wilderness in the plan area.</li> </ul>
<b>Wild &amp; Scenic Rivers</b>	<ul style="list-style-type: none"> <li>No Impacts</li> </ul>	<ul style="list-style-type: none"> <li>No Impacts</li> </ul>
<b>Cultural/Native American</b>	<ul style="list-style-type: none"> <li>There are no direct impacts.</li> <li>Specific implementation actions may adversely affect resources.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alternative 1 but covers all public lands</li> </ul>
Existing ACECs	<ul style="list-style-type: none"> <li>No Impacts</li> </ul>	<ul style="list-style-type: none"> <li>No Impacts</li> </ul>
<b>Recreation</b>	<ul style="list-style-type: none"> <li>Possible closure of some access routes.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alternative 1 but covers all public lands</li> </ul>
<b>Cattle Grazing</b>	<ul style="list-style-type: none"> <li>Temporary or permanent decrease in some authorized forage allocations on allotments.</li> <li>Changes in livestock class for better distribution and increased range improvements.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alternative 1 plus: Cattle activities associated with natural sources of water would be further restricted.</li> </ul>
<b>Wild Horse &amp; Burro</b>	<ul style="list-style-type: none"> <li>If one or more of the rangeland health standards are not being due to wild horses and burros, actions may include, removal and placement into the National Wild Horse and Burro Adoption Program, erecting fences, and/or providing additional improvements such as water sources on other public lands.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alternative 1 but covers all public lands</li> </ul>
<b>Minerals &amp; Mining</b>	<ul style="list-style-type: none"> <li>No Impacts</li> </ul>	<ul style="list-style-type: none"> <li>No Impacts</li> </ul>
<b>Vehicle Access</b>	<ul style="list-style-type: none"> <li>Possible closure of some access routes.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alternative 1 but covers all public lands</li> </ul>
<b>Land Uses / utilities</b>	<ul style="list-style-type: none"> <li>No impacts.</li> </ul>	<ul style="list-style-type: none"> <li>No impacts.</li> </ul>
<b>Socioeconomic</b>	<ul style="list-style-type: none"> <li>Meeting and maintaining standards has resulted in some increased cost of doing business and will continue to do so over the long-term.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts are the same as Alternative 1 except in the long-term, public lands that meet standards, are also socioeconomic benefit, for local communities and tourism.</li> </ul>



### Summary of Impacts - Desert Tortoise Conservation and Recovery

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Preferred
<b>Vegetation</b>	<ul style="list-style-type: none"> <li>Some increase in plant diversity biomass cover and seedling survival.</li> </ul>	<ul style="list-style-type: none"> <li>Increased above ground biomass, plant reproduction, and vigor.</li> <li>Anticipated upward trend in vegetation condition.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 2 except that it covers a smaller area</li> </ul>	<ul style="list-style-type: none"> <li>Less beneficial to vegetation than Alternative 2 or 3 because it covers a smaller area and grazing and burros would generally continue in existing areas.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 3.</li> </ul>
Noxious weeds	<ul style="list-style-type: none"> <li>No Impacts</li> </ul>	<ul style="list-style-type: none"> <li>Some benefits from efforts to enhance habitats and rehab surface disturbances</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 2 only covering a smaller area.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 3 only covering a smaller area.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 3</li> </ul>
<b>Wildlife</b>	<ul style="list-style-type: none"> <li>Impacts to wildlife populations are generally low.</li> <li>Impacts from major Highways (I-15 and I-40, Highway 95) can be expected to continue.</li> <li>Disturbance from closed routes and new projects</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 1 plus: Reduced competition for forage, trampling of animals, reduction in disturbed areas on trails and at watering sites.</li> <li>Decreased parking and camping distances off routes would reduce habitat loss</li> </ul>	<ul style="list-style-type: none"> <li>Beneficial impacts would be similar to those described for Alternative 2 but over a smaller area and with lower reductions in burro and cattle use</li> </ul>	<ul style="list-style-type: none"> <li>Similar to those described for Alternative 3 but over a smaller area and with continued effects of burro trailing and grazing in Shadow Valley.</li> <li>Non-lethal control of ravens (mitigation, sanitation, etc.) will help in the control and proliferation of ravens, but there is still the potential that some ravens will continue to be selective on juvenile tortoises. Limiting the removal of such ravens through non-lethal means will be largely ineffective and may adversely affect the recovery of the species</li> </ul>	<ul style="list-style-type: none"> <li>Impacts to general wildlife populations and habitats will be similar to Alternative 3.</li> </ul>
<b>T&amp;E Animals</b>	<ul style="list-style-type: none"> <li>No immediate strategy to ongoing significant areas of concern. That have resulted in natural processes that are not functioning properly</li> <li>Continuation of cumulative habitat fragmentation.</li> <li>Protection of T&amp;E on a site-specific basis.</li> <li>No Impacts</li> </ul>	<ul style="list-style-type: none"> <li>Most beneficial to long term recovery of desert tortoise.</li> <li>Projected reduction of mortality and increase in vigor and recruitment rate in 354,300 acres identified for DWMA's under ACEC prescriptions.</li> <li>Programmatic strategy for all high value DT habitat</li> <li>Reduced erosion rates, less soil compaction within DWMA's</li> </ul>	<ul style="list-style-type: none"> <li>29,110 acres less critical habitat under ACEC Mgt. than Alt 2.</li> <li>Beneficial to long term recovery of desert tortoise, but less than Alt 2.</li> <li>Projected reduction of mortality and increase in vigor and recruitment rate, but less than Alt 2.</li> <li>Programmatic strategy for all high value DT habitat</li> <li>Same as Alt 2</li> </ul>	<ul style="list-style-type: none"> <li>114,060 acres less critical habitat under ACEC Mgt. than Alt 3.</li> <li>Beneficial to long term recovery, but less than Alt 2 or 3.</li> <li>Projected reduction of mortality and increase in and recruitment rate, but less than Alt 2 or 3</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Alternative 3 except excludes high value DT habitat (9,696 acres) west of Turquoise Mtn. Road.</li> </ul>
<b>Soil-Water-Air</b>	<ul style="list-style-type: none"> <li>No Impacts</li> </ul>	<ul style="list-style-type: none"> <li>Reduced erosion rates, less soil compaction within DWMA's</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 2</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 2</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alternative 3</li> </ul>
<b>Cultural /Native American</b>	<ul style="list-style-type: none"> <li>Impacts would continue, particularly near water sources.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts would decrease, particularly near water sources.</li> <li>Surface disturbance limitations would reduce impacts from existing activities.</li> <li>Ground-disturbing activities may adversely affect resources.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 2 except: Impacts would not decrease in Northern Ivanpah Valley area.</li> <li>Less acreage would be in MUC L than in Alt 2.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 2 except: impacts would not decrease in Northern Ivanpah Valley or Shadow Valley areas and less acreage would be in MUC L than in either Alt 2 or 3.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alternative 3 except: Impacts would not decrease in Turquoise Mtn. Area.</li> </ul>



## Summary of Impacts - Desert Tortoise Conservation and Recovery

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Preferred
<b>Recreation</b>	<ul style="list-style-type: none"> <li>Some reduction in routes for recreation use and access.</li> <li>Stopping, parking, camping could occur within 300 feet of centerline within DWMMAs.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt. 1 except: Stopping, parking, camping would be limited to 50 feet from centerline within DWMMAs.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alternative 2 except stopping, parking, camping would be limited to 100 feet from centerline within DWMMAs.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alternative 1</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alternative 3</li> </ul>
<b>Cattle Grazing</b>	<ul style="list-style-type: none"> <li>Continued parameters on grazing use based on the status of the desert tortoise forage conditions and range assessments.</li> <li>Some allotments may be voluntarily canceled based on third party buy-outs</li> </ul>	<ul style="list-style-type: none"> <li>Grazing within 8 allotments within DWMMAs would be eliminated.</li> <li>Cancellation of grazing in DWMMAs for 8 allotments would result in discontinuation of grazing on 5 allotments and a substantial reduction in cattle operations in 3 allotments with associated income.</li> </ul>	<ul style="list-style-type: none"> <li>Grazing within 5 allotments within DWMMAs would have minimum forage allocations of 230 lbs air dry weight per acre for spring grazing to occur.</li> <li>Grazing within one ephemeral allotment would be eliminated.</li> <li>Cancellation of the ephemeral allotment will result in small impacts to cattle operations.</li> <li>Addition of a minimum spring forage allocation to five allotments will result in substantial increases in the cost of doing business and may result in lost income in years when no turn-out is permitted.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 1 except: ephemeral portions of 5 allotments would be canceled within DWMMAs</li> <li>Grazing within one ephemeral allotment would be eliminated</li> <li>Cancellation of ephemeral portions of AUMs will result in small impacts to cattle operations in five allotments with lost income from extra cows in about 4 years out of 20.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts are the same as Alt. 3.</li> </ul>
<b>Wild Horse &amp; Burro</b>	<ul style="list-style-type: none"> <li>Continued burro removals within the HMA until the overall AML is achieved focusing on Critical habitat</li> </ul>	<ul style="list-style-type: none"> <li>Complete removal of burro herd in Clark Mountain Burro HA.</li> <li>Cumulative effect of burro herd losses in CDCA.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Alt 1 but critical habitat would be further targeted for removals and the eastern portion of the HMA would be targeted for management of some burros.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 1</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 3</li> </ul>
<b>Minerals &amp; Mining</b>	<ul style="list-style-type: none"> <li>Impacts would continue unchanged consistent with existing State agreements and biological opinions.</li> </ul>	<ul style="list-style-type: none"> <li>Plans of Operations on small mining actions for 48,642 acres changed to MUC L.</li> <li>Limitation within DWMMAs on surface disturbance to 1% could impact mining particularly if the threshold is reached.</li> <li>Programmatic BO up to 100 acres could expedite approval process on mining actions</li> </ul>	<ul style="list-style-type: none"> <li>Impacts are the same as Alt 3 except: requirement for Plans of Operations would affect 42,713 acres changed to MUC L.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 2 except: requirement for Plans of Operations would affect 3,960 acres changed to MUC L.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts are the same as Alternative 3 except requirement for Plans of Operations would affect 30,010 acres changed to MUC L.</li> </ul>
<b>Vehicle Access</b>	<ul style="list-style-type: none"> <li>Some reduction in routes for use and access.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 1 plus Minor washes designated for closing in DWMMAs</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 2</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alternative 2</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 2</li> </ul>
<b>Socioeconomic</b>	<ul style="list-style-type: none"> <li>See Grazing above</li> <li>Tourism growth can be expected to continue</li> </ul>	<ul style="list-style-type: none"> <li>See Grazing above</li> <li>Tourism growth can be expected to continue</li> </ul>	<ul style="list-style-type: none"> <li>See Grazing above</li> <li>Tourism growth can be expected to continue</li> </ul>	<ul style="list-style-type: none"> <li>See Grazing above</li> <li>Tourism growth can be expected to continue</li> </ul>	<ul style="list-style-type: none"> <li>See Grazing above</li> <li>Tourism growth can be expected to continue</li> </ul>



### Summary of Impacts - Amargosa Vole Conservation and Recovery

Resource	Alternative 1	Alternative 2	Alternative 3 (Preferred)	Alternative 4
<b>Vegetation</b>	<ul style="list-style-type: none"> <li>Overall impacts of Alt 1 on riparian wetland vegetation and related resources are moderately positive.</li> </ul>	<ul style="list-style-type: none"> <li>General beneficial effects from habitat management emphasis.</li> </ul>	<ul style="list-style-type: none"> <li>Positive impacts would be similar to those for Alt 2, but would be somewhat lower in the Shoshone riparian portion of the corridor.</li> </ul>	<ul style="list-style-type: none"> <li>Positive impacts would be similar to those for Alt 2, but would be lower outside the ACEC in the riparian corridor. Watershed management benefits under this alternative would be modest in comparison with Alt 2/3.</li> </ul>
<b>T&amp;E Plants</b>	<ul style="list-style-type: none"> <li>Tecopa birdsbeak is a rare plant species in the Grimshaw Natural Area ACEC and receives protection there. No other special status plants are known from the existing ACECs.</li> </ul>	<ul style="list-style-type: none"> <li>A population of Tecopa birdsbeak a few miles south of Shoshone would be included in the expanded ACEC. It would be an additional focus for protection measures in subsequent ACEC planning. No other special status plants are known to be within the expanded ACEC.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts are the same as Alternative 2.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts are the same as Alternative 1 (No Action).</li> </ul>
<b>Noxious weeds</b>	<ul style="list-style-type: none"> <li>Exotic plants on private lands in the Shoshone stretch of the river which are displacing native vegetation would not be removed, and riparian restoration would not occur except where initiated by land owners.</li> </ul>	<ul style="list-style-type: none"> <li>Exotic plants (<i>Tamarix</i> spp.) on private lands within the Shoshone stretch of the river that are gradually displacing native vegetation would be removed and riparian restoration activities would occur, following Federal acquisition from willing sellers. Exotic seed source problem could then be reduced or eliminated.</li> </ul>	<ul style="list-style-type: none"> <li>Removals of noxious weeds would be similar to Alternative 2 but over an area 2,400 acres smaller and, hence, with reduced effectiveness.</li> </ul>	<ul style="list-style-type: none"> <li>The effects on removal of noxious weeds would be similar to those described in Alternative 2 or 3 but over a smaller area and, hence, with reduced effectiveness.</li> </ul>
<b>Wetlands &amp; riparian</b>	<ul style="list-style-type: none"> <li>Riparian habitats on public lands would continue to receive improvement by the removal of exotic tamarisk and replanting of native trees.</li> <li>Exotics in this area would likely continue to serve as a seed source for further exotic plant establishment in downstream portions of the Amargosa River.</li> </ul>	<ul style="list-style-type: none"> <li>Prescriptions would be developed for a single, coordinated, watershed-based ACEC</li> <li>Enhancement of riparian and wetland values would occur as tamarisk removal efforts were extended over a wider portion of the watershed (see the discussion above for Riparian/Wetlands).</li> </ul>	<ul style="list-style-type: none"> <li>Impacts to plant communities would be similar to those described in Alt 2 but over an area 2,400 acres smaller.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts to plant communities would be similar to those described in Alternative 1 within the Amargosa vole ACEC. The Carson Slough plant ACEC would be addressed separately as well.</li> </ul>
<b>Wildlife</b>	<ul style="list-style-type: none"> <li>Habitats on public lands would continue to receive improvement by the removal of exotic tamarisk and replanting of native trees.</li> <li>Consolidation of additional habitat important to migratory birds would not occur.</li> </ul>	<ul style="list-style-type: none"> <li>General beneficial effects from habitat management emphasis.</li> <li>Additional beneficial effects from habitat management emphasis including the Shoshone riverine area.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts to general wildlife resources would be similar as Alternative 2, except that additional habitat management emphasis would not be provided in the Shoshone riverine area or in the Shoshone Cave Whip-Scorpion HMP area.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts to general wildlife resources would be similar as Alternative 2, except that additional habitat management emphasis would not be provided in areas outside of the smaller designated ACEC.</li> <li>General beneficial effects from habitat management emphasis.</li> </ul>
<b>T&amp;E</b>	<ul style="list-style-type: none"> <li>Fragmented ownership of habitat would continue.</li> <li>Current ACEC management would continue for the vole.</li> </ul>	<ul style="list-style-type: none"> <li>Combined ACEC totaling 19,760 acres of public lands, including 10,450 additional acres would benefit vole.</li> <li>Acquisition opportunities for private lands to reduce/eliminate habitat fragmentation,</li> </ul>	<ul style="list-style-type: none"> <li>Combined ACEC totaling 17,000 acres of public lands, including 8,050 additional acres would benefit vole.</li> <li>Acquisition opportunities for private lands to reduce/ eliminate habitat</li> </ul>	<ul style="list-style-type: none"> <li>Combined ACEC of 4,520 acres of public lands, all of which would be critical habitat, would benefit vole.</li> <li>Acquisition opportunities for private lands to reduce/eliminate habitat</li> </ul>



### Summary of Impacts - Amargosa Vole Conservation and Recovery

		thus benefiting the vole	fragmentation, thus benefiting the vole.	fragmentation would occur, but to a lesser degree. Benefit to the vole would be less than Alts 2 and 3.
Existing ACECs	<ul style="list-style-type: none"> <li>No Impacts</li> </ul>	<ul style="list-style-type: none"> <li>The impacts are positive and significant for the Amargosa vole, both in the near-term and over the life of the ACEC management plan.</li> </ul>		<ul style="list-style-type: none"> <li>Some consolidation of currently fragmented vole habitat would occur.</li> <li>Impacts are still considered positive and significant for the Amargosa vole over the life of the ACEC management plan.</li> </ul>
Soil, water, Air	<ul style="list-style-type: none"> <li>Soil erosion rates will continue at current rates.</li> <li>Impacts from the no action alt represent non-point-source impacts which are controlled by Best Management Practices (BMP). Portions of the MUC and ACEC guidance for the CDCA Plan and specific management actions in the Amargosa and/or Grimshaw Natural Area ACEC Plans represent BMP under the Clean Water Act.</li> <li>Small reductions in particulate (PM<sub>10</sub>) emissions could result from better vegetative cover and reduced wind erosion within the ACECs.</li> </ul>	<ul style="list-style-type: none"> <li>Combine the two existing ACEC's</li> </ul>	<ul style="list-style-type: none"> <li>Not included in the new Amargosa River ACEC in this alt is the acquisition of 850 acres of private lands along the Amargosa River in the vicinity of Shoshone.</li> </ul>	<ul style="list-style-type: none"> <li>Designate the Amargosa vole ACEC. This ACEC designation would not include the existing Amargosa Canyon and Grimshaw Lake Natural Areas.</li> </ul>
Water Quality	<ul style="list-style-type: none"> <li>See above</li> </ul>	<ul style="list-style-type: none"> <li>Reduced sedimentation and increased infiltration rates</li> <li>The Amargosa watershed would derive increased benefits from coordinated watershed protection strategy and increased monitoring focus.</li> <li>Air: Impacts would be the same as the no action alternative.</li> </ul>	<ul style="list-style-type: none"> <li>Soil: Impacts would be the same as Alternative 2 but somewhat less beneficial due to the smaller area covered.</li> <li>Water: Impacts would be the same as Alternative 2.</li> <li>Air: Impacts would be the same as the no action alternative.</li> </ul>	<ul style="list-style-type: none"> <li>Soil: Impacts would be the same as Alternative 2 but somewhat less beneficial due to the smaller area covered.</li> <li>Water: Impacts would be the same as Alternative 2.</li> <li>Air: Impacts would be the same as the no action alternative.</li> </ul>
Wild & Scenic	<ul style="list-style-type: none"> <li>Identified Wild and Scenic designation for the Amargosa River</li> <li>Gradual loss of resources due to continued public access and uses compared to Alternatives 1, 2, and 3.</li> </ul>	<ul style="list-style-type: none"> <li>See above</li> <li>Identified Wild and Scenic designation for the Amargosa River</li> <li>Inclusion of significant resources in expanded ACEC would increase protection and preservation.</li> <li>Vegetative habitat manipulation could negatively impact resources.</li> </ul>	<ul style="list-style-type: none"> <li>See above</li> <li>Identified Wild and Scenic designation for the Amargosa River</li> <li>Inclusion of significant resources in expanded ACEC would increase protection and preservation.</li> <li>Fewer resources protected than with Alt 1 due to smaller area in ACEC.</li> <li>Vegetative habitat manipulation could negatively impact resources</li> </ul>	<ul style="list-style-type: none"> <li>See above</li> <li>Identified Wild and Scenic designation for the Amargosa River</li> <li>Inclusion of resources in expanded ACEC would increase their protection and preservation.</li> <li>Far less resources protected than with Alts 2 and 3 due to far smaller area in ACEC.</li> <li>Vegetative habitat manipulation could negatively impact resources.</li> </ul>
Cultural /Native American				
Recreation	<ul style="list-style-type: none"> <li>No Impacts</li> </ul>	<ul style="list-style-type: none"> <li>Moderate positive benefit to recreation resources and activities.</li> </ul>	<ul style="list-style-type: none"> <li>Where the actions in this alt improve the natural resources, they also improve the setting for nature-based recreation.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts are similar to Alternative 2.</li> </ul>
Minerals & Mining	<ul style="list-style-type: none"> <li>Overall impacts of the Alternative 1 on mineral development is deemed to</li> </ul>	<ul style="list-style-type: none"> <li>Grimshaw Lake/Tecopa portion of the alt; proposed expansion includes existing sand</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alternative 1</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 1</li> </ul>



### Summary of Impacts - Amargosa Vole Conservation and Recovery

	be low except for geothermal development in the existing ACEC.	and gravel pit and would severely curtail Inyo County's ability to maintain its roads. ACEC guidelines would likely deny expansion of the pit when permit is renewed in the year 2000.		
<b>Vehicle Access</b>	<ul style="list-style-type: none"> <li>Some indirect impacts may occur from development on adjacent private lands including proliferation of routes. These indirect impacts can be mitigated by additional route designation on MUC L public lands and within the existing ACECs, as needed.</li> </ul>	<ul style="list-style-type: none"> <li>New route designation is unlikely to be a substantial change from the existing situation in the Amargosa.</li> <li>Recreation uses may be impacted within the ACEC, just as they may in current critical habitat.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 2</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 2.</li> </ul>
<b>Land Use</b>	<ul style="list-style-type: none"> <li>Proposed activities in critical would continue to require consultation with the USFWS.</li> <li>Impacts from development on adjacent private lands include incidental take, loss or degradation of habitat from recreational use, proliferation of routes, and illegal dumping.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts to development include limitations on future rights-of-way or land-use permits, particularly where riparian impacts could occur, to be developed and analyzed in conjunction with ACEC management plans.</li> <li>Changes will result in increased costs and may preclude some activities in the ACEC.</li> <li>New locatable mining activities would require a plan of operations in conjunction with environmental assessment and biological consultation.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts to Land use are similar in scope as Alternative 2, except they would affect approximately 2,400 acres less.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts are the same in scope and acreage affected as Alt 1.</li> </ul>



Summary of Impacts - T&E Plant Conservation and Recovery - Lower Carson Slough		
Resource	Alternative 1	Alternative 2 (Preferred)
<b>Vegetation</b>		<b>Alternative 3</b>
	<ul style="list-style-type: none"> <li>Potential negative to vegetation from mining notices south of Ash Meadows Road.</li> </ul>	<ul style="list-style-type: none"> <li>Riparian, alkali marsh, and mesquite bosque communities on 4,340 acres of public lands would be designated as the Lower Carson Slough ACEC. Management actions to monitor, protect and study these communities would ensure their conservation and function.</li> </ul>
<b>T&amp;E Plants</b>	<ul style="list-style-type: none"> <li>No specific management for recovery of Amargosa niterwort, ash meadow gumplant and spring-loving centaury would be identified.</li> <li>Protective actions would be implemented as actions which may threaten plants are proposed on a case-by-case basis, and ACEC designation would not occur.</li> </ul>	<ul style="list-style-type: none"> <li>Amargosa niterwort, Ash Meadows gumplant, and spring-loving centaury on 4,340 acres of public lands on both sides of Ash Meadows Road including and between both designated critical habitat units would be designated Lower Carson Slough ACEC.</li> </ul>
<b>Noxious Weeds</b>	<ul style="list-style-type: none"> <li>Similar to Alt 1 of Standards and Guidelines</li> <li>See the discussion on General Vegetation</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Alternative 2 of Standards and Guidelines</li> <li>Impacts would be less than Alt 2 as the Lower Carson Slough riparian area would not benefit from prescriptions and management developed in an ACEC plan.</li> </ul>
<b>Wildlife</b>	<ul style="list-style-type: none"> <li>One of the few such wetland areas in the CDCA administered by the BLM not managed under specific prescriptions in an ACEC mgt plan.</li> </ul>	<ul style="list-style-type: none"> <li>Wildlife species dependent upon wetland and riparian habitat would benefit from the improved management of these communities.</li> </ul>
<b>T&amp;E Animals</b>	<ul style="list-style-type: none"> <li>No Impacts</li> </ul>	<ul style="list-style-type: none"> <li>Impacts would be less than Alternative 2 as less of the Lower Carson Slough riparian habitat would benefit from prescriptions and management developed in an ACEC plan.</li> <li>See the discussion for General Wildlife</li> </ul>
<b>Soil, water, Air</b>	<ul style="list-style-type: none"> <li>Impacts from the no action alternative represent non-point-source impacts which are controlled by Best Management Practices (BMP). Portions of the MUC guidance for the CDCA Plan and specific management actions in the Carson Slough area and the UPA represent BMP under the Clean Water Act. These practices include removal of exotic tamarisk and replacement with native species, route closures and restrictions on vehicle use, monitoring of surface waters, and providing hydrologist review of projects.</li> <li>These BMPs reduce sedimentation and increase infiltration rates. These are desirable and are positive steps toward solution of the impaired watershed classification, which occurs in portions of this watershed.</li> <li>Implementation of fallback standards as identified in 4.1.1 will provide some beneficial impacts to air and water quality and quantity.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts would be similar to those in Alternative 2 but on 1,540 acres of critical habitat for the niterwort and gumplant.</li> <li>Impacts would be similar to those in Alternative 2 but on 1,540 acres of critical habitat for the niterwort and gumplant.</li> <li>Similar to Alternative 2 of Standards and Guidelines</li> <li>Impacts would be less than Alt 2 as the Lower Carson Slough riparian area would not benefit from prescriptions and management developed in an ACEC plan.</li> <li>Impacts would be less than Alternative 2 as less of the Lower Carson Slough riparian habitat would benefit from prescriptions and management developed in an ACEC plan.</li> <li>See the discussion for General Wildlife</li> <li>Beneficial impacts are the same as Alternative 2 but would affect 2,800 acres less.</li> </ul>
<b>Recreation</b>	<ul style="list-style-type: none"> <li>Results in minor impacts to vehicular access.</li> </ul>	<ul style="list-style-type: none"> <li>Positive impact on recreation through enhancement</li> <li>Impacts are the same as Alternative 2.</li> </ul>



Northern & Eastern Mojave Draft Environmental Impact Statement  
Chapter 2: Proposed Actions and Alternatives

Summary of Impacts - T&E Plant Conservation and Recovery - Lower Carson Slough			
Resource	Alternative 1 and therefore, to recreation.	Alternative 2 (Preferred)	Alternative 3
Wild Horse & Burro	<ul style="list-style-type: none"> <li>No Impacts</li> </ul>	<p>of a more natural environment and trail system.</p> <ul style="list-style-type: none"> <li>Would result in the removal of drift burros from adjacent lands and placement in the BLM's adoption program.</li> <li>Would prevent a substantial increase in the animals from occurring at some future date</li> </ul>	<ul style="list-style-type: none"> <li>Impacts are the same as Alt 2.</li> </ul>
Minerals & Mining	<ul style="list-style-type: none"> <li>An active zeolite mine five miles east of Death Valley Junction would not be affected except for T&amp;E plant survey and appropriate mitigation if an expansion of the mine is proposed.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts are the same, as Alternative 1 except public lands south of Ash Meadows Road (1,290 acres) would be managed according to MUC L guidelines. (Plan of Operations requirement for small mining operations)</li> </ul>	<ul style="list-style-type: none"> <li>Impacts are similar to Alternative 2 but approximately half as much acreage would be affected by requirements for Plans of Operation for small mining operations.</li> </ul>
Vehicle Access	<ul style="list-style-type: none"> <li>Supplemental route designation may be pursued north of Ash Meadows Road as time and resources permit to protect sensitive soils riparian areas, and T&amp;E plants.</li> </ul>	<ul style="list-style-type: none"> <li>Some routes may be closed to protect listed plants and sensitive soil complexes based on results of analysis and survey including on 1,290 acres south of Ash Meadows Road.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts are similar to Alternative 2 but would affect about half as much acreage south of Ash Meadows Road.</li> </ul>



## Summary of Impacts - Bat Conservation in the Silurian Hills

Resource	Alternative 1	Alternative 2	Alternative 3 (Preferred)
<b>Wildlife</b>	<ul style="list-style-type: none"> <li>• Sensitive biological resources would continue to be subject to potential effect from notice-level mining actions within 15 days of filing.</li> <li>• Mitigation designed to minimize active mining impacts to bats/mine-dwelling and their habitat in the area would continue to be difficult to effectively achieve with the short review period.</li> <li>• Little agency emphasis would be extended to studying how best to conserve bats/mine dwelling wildlife and habitat</li> </ul>	<ul style="list-style-type: none"> <li>• A habitat management plan would be developed with management direction consistent with guidance outlined in the BLM's bat management policies, the CDCA Plan, and any State or Federal bat species listings, should they occur</li> <li>• Establishment of this HMP could eventually result in additional parameters on future authorized activities or access.</li> <li>• Could identify additional parameters on land-use activities.</li> </ul>	<ul style="list-style-type: none"> <li>• The review period for identification of mitigation measures for these sensitive biological resources would be increased from 15 days to 30 days.</li> <li>• Preparation of an environmental assessment would be required on all mining actions on affected public lands.</li> <li>• Anticipated to result in limited route closures/seasonal restrictions for the benefit of bats and other mine dwelling wildlife.</li> <li>• Bat habitat would gain greater protection</li> </ul>
<b>T&amp;E Animals</b>	<ul style="list-style-type: none"> <li>• Protection of BLM sensitive and other bat species known to reside in wintering or nursery roosts within inactive mines would occur on a case-by-case basis as proposals for mining and other activities are received.</li> </ul>	<ul style="list-style-type: none"> <li>• A habitat management plan (HMP) would be developed that implements management direction provided in BLM's bat management policies.</li> <li>• Habitat for bats and other cave-dwelling species would receive the benefits of a deliberate and focused strategy for protecting caves and abandoned mines in the Silurian Hills. A study plan to enhance conservation of bat habitat would occur.</li> </ul>	<ul style="list-style-type: none"> <li>• Same as Alt 1 except: programmatic measures for consistent application to all activities can be developed that protect and enhance bat populations</li> </ul>
<b>Cultural / Native American</b>	<ul style="list-style-type: none"> <li>• Current management practices would continue and some inadvertent affects would occur.</li> </ul>	<ul style="list-style-type: none"> <li>• MUC change to L will enhance potential for identifying cultural resources associated with mineral testing and extraction thereby providing for avoidance or mitigation.</li> <li>• Appropriate rehabilitation of historic period shafts and adits for bat habitat will enhance protection of any remnant cultural resources (historic period mining features).</li> </ul>	<ul style="list-style-type: none"> <li>• MUC change to L will enhance potential for identifying cultural resources associated with mineral testing and extraction thereby providing for avoidance or mitigation.</li> <li>• Appropriate rehabilitation of historic period shafts and adits for bat habitat will enhance protection of any remnant cultural resources</li> </ul>
<b>Recreation</b>	<ul style="list-style-type: none"> <li>• No Impacts</li> </ul>	<ul style="list-style-type: none"> <li>• Non-motorized buffers around some inactive mines could limit recreational opportunities for rockhounds, and historic seekers.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts are the same as Alternative 2.</li> </ul>
<b>Minerals &amp; Mining</b>	<ul style="list-style-type: none"> <li>• No Impacts</li> </ul>	<ul style="list-style-type: none"> <li>• The review period for identification of mitigation measures would be increased from 15 days to 30 days.</li> <li>• New small-scale (under 5 acres) mining exploratory activities proposed for old mining adits would be expected to incur some increased costs and time delays due to requirement for an EA in MUC (L).</li> <li>• Impacts would be greater for the smaller (under 1 acre) operations not required to file a reclamation plan with the State tha have minimal documentation requirements to operate in MUC (M) areas with no special designations.</li> </ul>	<ul style="list-style-type: none"> <li>• Same as Alt 2</li> </ul>
<b>Vehicle Access</b>	<ul style="list-style-type: none"> <li>• Few impacts to vehicle access are anticipated from the No Action Alternative</li> <li>• Access on existing routes of travel with localized restrictions to vehicular access will occur, based of sensitive resources when identified. The network of routes available for casual motorized use will continue to provide reasonable access throughout the planning area</li> </ul>	<ul style="list-style-type: none"> <li>• This alternative would result in minor to moderate negative impacts to vehicle access based on route closures and seasonal limitations identified during HMP planning. Additional public input would occur at that time.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts would be similar to Alt 2 but may be less since route designation will not be looked at through an HMP</li> </ul>



Northern & Eastern Mojave Draft Environmental Impact Statement  
Chapter 2: Proposed Actions and Alternatives

**Summary of Impacts - Released Lands - MUC of Released WSAs**

Resource	Alternative 1	Alternative 2	Alternative 3 (Preferred)
<b>Vegetation</b>	<ul style="list-style-type: none"> <li>There would be no direct impacts on natural resources using the CDCA Plan MUC guidance for released lands.</li> <li>Potential for indirect impacts would continue to occur with less opportunity for mitigation for small mining actions in MUC M areas.</li> <li>Indirect beneficial impacts from route designation in MUC L areas can be anticipated particularly in washes.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts would be similar to Alternative 1 except that the cumulative addition of 85,450 acres in MUC L would result in potential beneficial impacts on those lands, as discussed under No Action. On a parcel by parcel basis, this alternative would be potentially more resource friendly in 8 areas, and partially so in another 4 areas. It would be less resource friendly in 8 areas, and partially so in another 4 areas.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts would be similar to Alternative 1 (No Action) except that the cumulative addition of 76,970 acres in MUC L would result in potential beneficial impacts on those lands, as discussed under No Action. On a parcel by parcel basis, this alternative would be potentially more resource friendly in 5 areas than no action, and partially so in another 4 areas. It would be partially less resource friendly in 2 areas.</li> </ul>
Noxious Weeds	• See above	• See above	• See above
Wetlands & Riparian	• See above	• See above	• See above
Existing ACECs	• See above	• See above	• See above
<b>Wildlife</b>			
T&E Animals	• See above	• See above	• See above
Existing ACECs	• See above	• See above	• See above
<b>Soil, Water, Air</b>			
Water Quality/ Quantity	• See above	• See above	• See above
<b>Cultural/Native American</b>	<ul style="list-style-type: none"> <li>No Impacts</li> </ul>	<ul style="list-style-type: none"> <li>For those areas designated as MUC M more widespread and more severe impacts might be expected from higher levels of vehicle use, and from shorter time limits for response to mining proposals.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts would be the same as for those areas designated MUC M in Alternative 3, except for those areas designated L which will be the same as Alternative 2.</li> </ul>
<b>Recreation</b>	<ul style="list-style-type: none"> <li>No Impacts</li> </ul>	<ul style="list-style-type: none"> <li>No Impacts</li> </ul>	<ul style="list-style-type: none"> <li>No Impacts</li> </ul>
<b>Minerals &amp; Mining</b>	<ul style="list-style-type: none"> <li>Alt 1 cumulatively would be more favorable than Alt 2 or 3 that would provide for fewer released polygons to return to MUC M. The advantage would be the greater applicability of Notice level activity, including in areas with higher mineral potential. On a site-specific basis, the other alternatives may be preferable</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 1 except that the addition of 85,450 acres in MUC L would result in potential negative impacts to small exploratory mining activities on those lands, as discussed under No Action. On a parcel by parcel basis, this alternative would be potentially more mineral exploration friendly in 8 areas, and partially so in another 4 areas. It would be less mineral exploration friendly in 8 areas, and partially so in 4 areas.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 1 except that the addition of 76,970 acres in MUC L would result in potential negative impacts to small exploratory mining activities on those lands, as discussed under No Action. This alternative would be slightly more beneficial to mining than alternative 2 on a per acre basis. On a parcel by parcel basis, this alternative would be potentially more mineral exploration friendly in 2 areas than no action. It would be less mineral exploration friendly than no action in 5 areas, and partially so in 4 areas.</li> </ul>
<b>Vehicle Access</b>	<ul style="list-style-type: none"> <li>Overall route designation can be expected to result in fewer open routes on released lands identified as MUC L but this may vary on a site-specific basis.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 1: The addition of 85,450 acres in MUC L could result in potential additional limitations to access during route designation on those lands, as discussed under No Action. On a parcel by parcel basis, this alt would be potentially more access friendly in 8 areas, and partially so in 4 areas. It would be less access friendly in 8 areas, and partially so in 4 areas.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 1, The addition of 76,970 acres in MUC L could result in potential additional limitations to access during route designation on those lands, as discussed under No Action. On a parcel by parcel basis, this alternative would be partially more access friendly in 2 areas. It would be less access friendly in 5 areas, and partially so in another 4 areas</li> </ul>



Summary of Impacts - Greenwater Canyon ACEC Deletion Proposal		
Resource	Alternative 1	Alternative 2 (Preferred)
Cultural/Native American	<ul style="list-style-type: none"><li>No changes to existing situation under Alt 1. Manage under existing ACEC Management Plan.</li></ul>	<ul style="list-style-type: none"><li>No known sites would be impacted. As yet unidentified cultural resources within the remaining portion of the ACEC would be managed under MUC L guidelines.</li></ul>
Minerals & Mining	<ul style="list-style-type: none"><li>Mineral activities in the area currently require plans of operation and special mitigation strategies to prevent impact to any important cultural resources</li></ul>	<ul style="list-style-type: none"><li>Impacts are the same as Alternative 1. Lands requiring special mitigation strategies in the BLM ACEC Plan to prevent impact to any important cultural or other natural resources that would have affected mining are now located within Death Valley National Park boundaries.</li></ul>



### Summary of Impacts - Organized Competitive Vehicle Events

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5 (Preferred)
Vegetation	<ul style="list-style-type: none"> <li>loss of individual plants through crushing</li> <li>Disturbance of soil structure supporting vegetation, promotion of weedy species through surface disturbance, loss of soil after loss of soil-holding cryptogamic crusts, loss of seeds in the soil, and reduction of soil moisture through compaction.</li> <li>Non-native invasive plants also pose an increased potential for larger fires.</li> <li>Course widening could have a substantial effect on vegetative composition.</li> <li>Data collected in areas outside desert tortoise habitat where the permitted course width was 100 feet showed that straying and course widening occurred. The course width in the area to the west of a pit area was measured at 260 feet and near Solomons Knob several transects noted race vehicle tracks over 90 feet outside the permitted course width.</li> <li>There is evidence of substantial motorcycle and 3-wheel ATV play off the road in all directions around the road junction at the Wander Mine, causing substantial shrub damage and road braiding.</li> <li>As a result of short-cutting and overrunning in washes, the 1989 event caused extensive damage to vegetation and breakdown of wash banks.</li> <li>Higher than normal levels of dust on leaf surfaces may reduce cooling efficiency of the plants and cause added stress.</li> </ul>	<ul style="list-style-type: none"> <li>Crushing of vegetation along courses would not occur.</li> <li>Changes in species composition would be substantially reduced.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts would be similar to those described in Alternative 1 outside of DWMAs, but sensitive plant communities would be avoided.</li> <li>Within DWMAs, impacts would be the same as Alt 2.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts are the same as Alternative 3.</li> </ul>	<ul style="list-style-type: none"> <li>The impacts of this alternative within the Dumont Dunes off-highway vehicle "Open" area would be the same as Alternative 1 for all resources. The impacts in all other areas of the NEMO Planning Area would be the same as Alternative 2 for all resources.</li> </ul>
T&E Plants	<ul style="list-style-type: none"> <li>Mitigation measures commonly applied would avoid races on routes traversing known habitat of special status plants. However, inventories of special status plants are incomplete.</li> </ul>	<ul style="list-style-type: none"> <li>The risk of damage to special status plants or their habitat from riders, spectators, and pre-event riders would be removed</li> </ul>	<ul style="list-style-type: none"> <li>Impacts would be similar to Alt 1 outside of DWMAs but the risk of having an event in habitat of a special status plant would be reduced. Some risk would remain because sensitive plant inventories are incomplete.</li> <li>Within DWMAs, impacts would be the same as Alt 2.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts are the same as Alternative 3.</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>
Noxious Weeds	<ul style="list-style-type: none"> <li>Although most of these impacts (e.g., soil profile disruption and compaction, germination and cover site modification, and forb and shrub loss) would be limited to the event corridor itself, the potential for spread of invasive non-native plants and vegetative type-conversion would extend beyond the race corridor.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts are the same as Alt 2 of Standards and Guidelines</li> </ul>	<ul style="list-style-type: none"> <li>Impacts are the same as Alt 2 of Standards and Guidelines</li> </ul>	<ul style="list-style-type: none"> <li>Impacts are the same as Alt 2 of Standards and Guidelines</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>
Wetlands, Riparian &	<ul style="list-style-type: none"> <li>Mitigation measures commonly applied would avoid races on routes traversing riparian or wetland areas</li> </ul>	<ul style="list-style-type: none"> <li>Impacts are the same as Alt 1</li> </ul>	<ul style="list-style-type: none"> <li>Impacts are the same as Alt 1</li> </ul>	<ul style="list-style-type: none"> <li>Substantial strategies would be</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>



## Summary of Impacts - Organized Competitive Vehicle Events

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5 (Preferred)
Floodplains	<ul style="list-style-type: none"> <li>Where avoidance is not feasible MUC guidance and mitigation would be used consistent with fallback standards.</li> </ul>			necessary if a feasible alignment is found.	
Wildlife	<ul style="list-style-type: none"> <li>Loss of forage, changes in forage species composition, and loss of cover would result from disturbance of vegetation.</li> <li>Animals can be run over above ground or below ground. Soil compaction disrupts burrow suitability. In general, it can be expected that species diversity would be reduced along race routes where vegetation and soil disturbances occur.</li> <li>Wildlife activities would be disrupted on the short term, and could include not only the race event but also pre-riding of the course as participants practice.</li> <li>Event could cause reproductive failure for that year.</li> <li>Changes in behavior patterns could occur</li> <li>Wildlife may be injured or killed</li> <li>Habitat degradation could occur</li> </ul>	<ul style="list-style-type: none"> <li>This alternative would benefit wildlife species, as disturbances would be removed.</li> <li>Removal of racing would allow for continued soil and vegetation recovery.</li> <li>Degradation of habitat along race courses would not occur. These and other effects described more fully in Alternative 1 would not occur.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts would be similar to those described in Alternative 1, but important wildlife habitat would be avoided.</li> </ul>	<ul style="list-style-type: none"> <li>The effects would be similar to Alt 3 but additional impacts to riparian habitat may occur.</li> </ul>	
T&E	<ul style="list-style-type: none"> <li>Where events pass through habitat of a listed animal, there is potential for a take through harm or harassment</li> <li>Habitat loss for special status animals, especially desert tortoise, are a result of factors described in the discussion of General Vegetation above.</li> <li>Heavily used route corridors provide for invasion of weedy species, which in turn may result in type-converted areas that provide reduced cover for hatchling and juvenile tortoises, making them susceptible to predation and death from exposure. The results are areas of reduced tortoise density.</li> <li>The widening of the course may contribute to habitat fragmentation.</li> <li>Tortoise burrows may be crushed</li> <li>Sensitive species such as bighorn sheep, burrowing owls and bats, are likely to be impacted (ranging from temporary displacement from habitat to complete area avoidance).</li> </ul>	<ul style="list-style-type: none"> <li>This alternative would benefit the desert tortoise and possibly other special status animals by removing potential for direct mortality from runovers and by facilitating continued soil and vegetative recovery.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts would be similar to those described in Alt 2 except: outside of DWMAs areas could continue to receive impacts if a viable course is identified.</li> </ul>	<ul style="list-style-type: none"> <li>There is a high potential for take of the desert tortoise by a competitive event held in a narrow wash such as Kingston. Though not designated as critical habitat for the species this wash may act as an important habitat linkage between East and West Mojave desert tortoise populations. Impacts on tortoise are similar to Alt 3.</li> </ul>	
Soil, Water, Air	<ul style="list-style-type: none"> <li>Soil disturbance and removal of vegetation associated with use of a competitive race course would result in increased wind and water erosion of affected soils. Reduced soil permeability /water storage potential and compaction within the race course would also occur with such use over time. Levels of impact would differ depending on allowed race course width, specific race course segment, and frequency/timing of use.</li> <li>Soil impacts associated with past events were determined to be a reduction in desert pavement coverage and increased</li> </ul>	<ul style="list-style-type: none"> <li>Moderate increases in short-term air quality and soil impacts in OHV open areas as a result of displaced racing activity.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts are the same as Alt 1</li> </ul>	<ul style="list-style-type: none"> <li>Impacts are similar to Alternative 3. Kingston Wash soils have a relatively low potential for wind erosion in comparison to the original Barstow-to-Vegas course, along the Boulder</li> </ul>	



## Summary of Impacts - Organized Competitive Vehicle Events

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5 (Preferred)
	<p>development of soft, powder-like materials is very susceptible to wind and water erosion.</p> <ul style="list-style-type: none"> <li>• Soil nutrient levels are expected to decrease over the long term due to the removal of the vegetative cover, from the churning of the soil surface by race traffic, and through the mixing of nutrient poor soils with the more fertile soils associated with "plant islands."</li> <li>• temporary increase in the amount of oxidants and carbon monoxide along the course.</li> <li>• Air quality standards would be temporarily exceeded based on measurement of total suspended particulates.</li> <li>• The atmosphere surrounding the event would be impacted by the generation of dust and temporary emissions result in a short-term (approximately 14 hours) reduction in air quality.</li> <li>• On occasion, artificial washes are formed due to soil erosion and altered water drainage along competitive courses particularly on steeper grades.</li> </ul>			Corridor.	
Water Quality/Quantity		<ul style="list-style-type: none"> <li>• No Impact</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts are the same as Alt 1</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts are the same as Alt 1</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
Cultural/Native American	<ul style="list-style-type: none"> <li>• Unidentified sites within or adjacent to event routes may be impacted.</li> <li>• Unsurveyed areas could be subject to impact from vehicles that stray from the course.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts are the same as Alt 1</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts are the same as Alt 1</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts may occur to two known sites that may be eligible for listing in the National Register of Historic Places and that may be of great concern to Native Americans</li> <li>• No protection is offered to historic routes and trails that may be determined eligible for listing in the NRHP.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>
Recreation	<ul style="list-style-type: none"> <li>• Although the original B-to-V has not been run since 1989, some shorter length may be viable.</li> <li>• Competitive events can be allowed consistent with MUC and Recreation Element guidelines of the CDCA Plan, but it is difficult to locate a suitable race course in the NEMO Planning Area primarily due to resource conflicts.</li> </ul>	<ul style="list-style-type: none"> <li>• The deletion of the race course would have a minimal negative effect to opportunities for competitive vehicle events compared to Alt 1.</li> <li>• If the B-to-V course is deleted and no provisions are made for competitive vehicle events outside OHV open areas potential</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts from the deletion of the B-to-V course would be the same as Alt 2.</li> <li>• This Alternative would allow for resumption of long distance point-to-point competitive events outside of OHV open areas and impacts would be potentially positive. However, as with other alternatives, processing applications would be time consuming and have</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts are similar to Alt 3 but approval of the course would result in additional restrictions associated with protection measures for wilderness, T&amp;E and riparian resources, including speed limits and additional check</li> </ul>	



## Summary of Impacts - Organized Competitive Vehicle Events

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5 (Preferred)
<b>Grazing</b>	<ul style="list-style-type: none"> <li>There would be short-term disruption of on-going grazing activities</li> </ul>	<ul style="list-style-type: none"> <li>No Impacts</li> </ul>	<ul style="list-style-type: none"> <li>Impacts would be the same as Alt 1 in any areas where an event is permitted within an allotment.</li> </ul>	<ul style="list-style-type: none"> <li>This revised alignment would result in less potential disruption to cattle grazing than the current corridor.</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>
<b>Vehicle Access</b>	<ul style="list-style-type: none"> <li>No additional access would be provided with this alternative</li> <li>Some access adjacent to the race course could be degraded over time as a result of competitive events and spectator visitation.</li> <li>Route maintenance needs would be highest under this alternative</li> </ul>	<ul style="list-style-type: none"> <li>Impacts would be lower than Alternative 1 because the degree of open route maintenance located in proximity to the B-to-V race course is anticipated to be lowest of all alternatives presented.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts are similar to Alternative 1 except: The degree of open route maintenance associated with this alternative is anticipated to be higher than Alternative 2 and 4, but less than Alternative 1.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts are similar to Alt 3. However open route maintenance is anticipated to be higher than Alt 2 and less than Alt 1 and 3.</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>
<b>Socioeconomic</b>	<ul style="list-style-type: none"> <li>Adverse impacts from Alt 1 are considered negligible.</li> <li>Should such an event be held, communities along the course, particularly in Barstow and Baker, could incur some economic benefit from the sale of goods and services to participants, their families, and to spectators. The past event has attracted up to 5,000 individuals.</li> </ul>	<ul style="list-style-type: none"> <li>Communities along the B-to-V course, particularly Barstow and Baker, would lose some economic benefit from the sale of goods and services to participants, their families, and to spectators.</li> <li>May limit District 37 (AMIA) in their ability to raise funds to support other events.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts are the same as Alternative 1.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts are similar to Alternative 1 except for the increased cost associated with running the activity in the Kingston Wash.</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>



Summary of Impacts - Route Designation				
Resource	Alternative 1	Alternative 2	Alternative 3 (Preferred)	Alternative 4
Vegetation	<ul style="list-style-type: none"> <li>Minor potential for fire occurrence</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 1</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 1</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 1</li> </ul>
T&E Plants	<ul style="list-style-type: none"> <li>Minor impacts to sensitive vegetation as a result of parking, camping, and route-proliferation</li> </ul>	<ul style="list-style-type: none"> <li>Positive benefit to any known sensitive vegetation within ¼ mi. of routes</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 2</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 2</li> </ul>
Noxious Weeds	<ul style="list-style-type: none"> <li>Potential for weed establishment adjacent to open routes</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 1</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 1</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 1</li> </ul>
Wetlands, Riparian & Floodplains	<ul style="list-style-type: none"> <li>Localized impacts to springs frequented by visitors</li> </ul>	<ul style="list-style-type: none"> <li>Positive benefit to springs and streams within ¼ mi. of routes</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 2</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 2</li> </ul>
Wildlife	<ul style="list-style-type: none"> <li>Minor impacts overall, localized seasonal impacts during wildlife calving and rutting</li> </ul>	<ul style="list-style-type: none"> <li>Minor impacts overall, 1070 fewer mi. of routes would lessen localized or seasonal impacts</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 2</li> </ul>	<ul style="list-style-type: none"> <li>Potentially greater than Alt 2 &amp; 3, but fewer impacts on wildlife than Alt 1</li> </ul>
T&E	<ul style="list-style-type: none"> <li>Minor direct impacts, minor impacts to DT habitat (same as T&amp;E plants) and some habitat fragmentation</li> </ul>	<ul style="list-style-type: none"> <li>Consistent with biological parameters, fewer impacts to DT habitat and less potential for fragmentation</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 2</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 2</li> </ul>
Soil, Water, Air	<ul style="list-style-type: none"> <li>Some increased erosion potential, and disruption of biological soil crusts adjacent to open routes</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 1. These impacts will be offset by moderate benefit in washes from limited/closed routes</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 2 within DWMAs, less than Alt 1 outside of DWMAs but greater than Alt 2 based on likely number of closed or limited washes.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 3</li> </ul>
Water Quality/Quantity	<ul style="list-style-type: none"> <li>Localized increased turbidity and leaking fuel oils in open wash routes</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Alt 1 in type, but lesser in quantity, based on fewer open wash routes.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 2 within DWMAs, less than Alt 1 outside of DWMAs but greater than Alt 2 based on likely number of closed or limited washes.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 3</li> </ul>
Cultural/Native American	<ul style="list-style-type: none"> <li>No new impacts anticipated.</li> </ul>	<ul style="list-style-type: none"> <li>Positive benefit to cultural within ¼ mi. of significant sites</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 2</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 2</li> </ul>
Recreation	<ul style="list-style-type: none"> <li>No new impacts. CDCA Plan designations will continue. Five routes previously closed through Federal Register (1979, 1987) would be closed through this process. More routes may result in impacts to scenic resources for some primitive recreationists.</li> </ul>	<ul style="list-style-type: none"> <li>Moderate impacts from restrictions on approximately 12.5% of DWMA routes. Technical 4-wheel drivers and hunters that currently utilize washes and more rugged routes for motorized access would be most affected.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 2 within DWMAs.. Seasonally or otherwise limited or closed washes would be anticipated to be lower outside of sensitive areas, based on criteria.</li> </ul>	<ul style="list-style-type: none"> <li>Similar to Alt 3, but no closures in MUC M or I based on redundancy would decrease the total number of routes affected, and therefore the recreational access restrictions.</li> </ul>



Summary of Impacts - Route Designation				
Resource	Alternative 1	Alternative 2	Alternative 3 (Preferred)	Alternative 4
<b>Minerals &amp; Mining</b>	<ul style="list-style-type: none"> <li>No new impacts anticipated</li> </ul>	<ul style="list-style-type: none"> <li>Designation of wash routes as "closed" or "limited" will limit potential for ground exploration in southern third of the planning area now, and in the rest of the planning area in the future. Impact on mineral development is anticipated to be minor.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 2 in DWMAs. Seasonally or otherwise limited or closed washes would be anticipated to be lower outside of sensitive areas, based on criteria.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 3.</li> </ul>
<b>Vehicle Access</b>	<ul style="list-style-type: none"> <li>Abt. 8,560 miles of the inventoried route network in the southern portion of the planning area designated "open" except 11 mi. previously closed would be designated "closed", along with 6 mi. other previously closed routes</li> </ul>	<ul style="list-style-type: none"> <li>7,490 miles designated "open", 548 miles designated "limited", and 521 miles designated "closed" of the 8,560 mile route network that has been inventoried in the southern portion of the planning area</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 2 in DWMAs. Future designations outside of DWMAs can be expected to result in more routes than Alt. 2 but less than Alt 1.</li> </ul>	<ul style="list-style-type: none"> <li>Same as Alt 3.</li> </ul>



Summary of Impacts - Tecopa / Shoshone Proposed Landfill MUC Change for Disposal		
Resource	Alternative 1	Alternative 2 (Preferred)
<b>Vegetation</b>	<ul style="list-style-type: none"> <li>• loss of vegetation</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts are anticipated to be the same as Alternative 1</li> </ul>
<b>Wildlife</b>	<ul style="list-style-type: none"> <li>• Loss of associated resident wildlife on approximately 5 acres of the lease site.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts are anticipated to be the same as Alternative 1</li> </ul>
<b>Soil, Water, Air</b>	<ul style="list-style-type: none"> <li>• Surface disturbance, disruption and compaction of surface soils</li> <li>• Increased local dust generation during activities.</li> <li>• No future groundwater impacts are anticipated</li> <li>• Shoshone site also includes disruption of natural drainage patterns and increased erosion to an adjacent drainage.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts are anticipated to be the same as Alternative 1</li> </ul>
<b>Land Use/ Utilities</b>	<ul style="list-style-type: none"> <li>• Indirect impacts would occur at the Tecopa site based on continued use of the existing landfill authorization until site closure and reclamation is effected, or, if State standards can be met, until the authorization expires in 2007.</li> <li>• Indirect impacts at the Shoshone site would occur based on continued use of the existing landfill authorization at a much reduced rate, until site closure and reclamation is effected, or, if State standards can be met, until the authorization expires in 2008.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar to Alt 1 except that: closure may occur over a longer time frame. Facilities are expected to get a limited amount of use in the future with modest impacts from landfilling activities. The State, rather than BLM, would identify mitigation measures, because it is against BLM policy to include encumbrances on these patents.</li> </ul>
<b>Socioeconomic</b>	<ul style="list-style-type: none"> <li>• The socioeconomic impacts of retaining the landfills in Federal ownership are unknown regionally. Locally, it may result in higher short-term costs for waste management in eastern Inyo County. The long-term costs are difficult to predict, and would depend upon the ultimate strategy and timing for each landfill.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts are similar to Alt 1 except locally Alt 2 may result in lower short-term costs for waste management in Eastern Inyo County.</li> </ul>

### Summary of Impacts - Wild and Scenic River Eligibility

#### All Alternatives

- The WSR Act and Federal guidelines require Federal agencies, upon determination of WSR eligibility, to provide interim protection and management for a river's free-flowing character and any identified outstandingly remarkable values, subject to valid existing rights, until such time as a suitability study is completed. Refer to Appendix O, S, and T for a description of the outstanding remarkable values on each stream that will benefit by this eligibility determination. During this interim period all proposals that could affect the Amargosa River, Cottonwood Creek, and Surprise Canyon and their resources will be evaluated against the regulatory criteria and additional limits on uses may occur. Further analysis of potential impacts to all resources and uses will be evaluated during the suitability analysis.



This Page Intentionally Left Blank

## 3.0 AFFECTED ENVIRONMENT

The following information is provided for the purpose of describing the environment in the area of the proposed project. The information is presented in a general manner and is not intended to be a detailed description of the environment. The information is presented in a general manner and is not intended to be a detailed description of the environment. The information is presented in a general manner and is not intended to be a detailed description of the environment.

The following information is provided for the purpose of describing the environment in the area of the proposed project. The information is presented in a general manner and is not intended to be a detailed description of the environment. The information is presented in a general manner and is not intended to be a detailed description of the environment.

The following information is provided for the purpose of describing the environment in the area of the proposed project. The information is presented in a general manner and is not intended to be a detailed description of the environment. The information is presented in a general manner and is not intended to be a detailed description of the environment.

The following information is provided for the purpose of describing the environment in the area of the proposed project. The information is presented in a general manner and is not intended to be a detailed description of the environment. The information is presented in a general manner and is not intended to be a detailed description of the environment.

The following information is provided for the purpose of describing the environment in the area of the proposed project. The information is presented in a general manner and is not intended to be a detailed description of the environment. The information is presented in a general manner and is not intended to be a detailed description of the environment.

The following information is provided for the purpose of describing the environment in the area of the proposed project. The information is presented in a general manner and is not intended to be a detailed description of the environment. The information is presented in a general manner and is not intended to be a detailed description of the environment.







### 3.0 AFFECTED ENVIRONMENT

This section describes the affected environment of the BLM-administered public lands within the NEMO Planning Area. A complete description of the resources can be found in the CDCA Plan and EIS and is incorporated by reference (40 CFR 1502.21). The existing management situation for the Planning Area is summarized in Appendix K. A separate, more detailed, existing management situation for the desert tortoise and the resource values and uses of its habitat in the NEMO Planning Area was prepared in April, 1998, (Foreman 1998) and is available for review at local BLM offices in Needles, Barstow, and Riverside, California.

The NEMO Planning Area (See Chapter 7, Figure 1) is a large and diverse region in southeastern California<sup>1</sup> characterized by several north-south trending, parallel mountain ranges separated by narrow valleys in the north and by wide valleys in the south. The Planning Area is considered to contain parts of both the Great Basin and Mojave Deserts. BLM-managed public lands in the Planning Area exists in three distinct and geographically separated regions.

The northernmost area of public lands includes those lands north and west of Death Valley National Park, and north of the Fort Irwin National Training Center. This area is the westernmost extent of the Great Basin mountain ranges and their valleys, including the Panamint Range, the Inyo Mountains, and the Argus Range. The mountain ranges are moderately to very steep, and the higher elevations tend to get more rain than Death Valley to the east. Although overall annual precipitation levels are still within the desert range, short-term flood flows are not unusual.

The central area of public lands includes those lands east and south of Death Valley National Park, between Nevada on the east and State Route 247 on the west, extending south to the peaks of the Kingston Range in a line approximately parallel to and about a mile south of the Inyo/San Bernardino County line. This is the Amargosa watershed -- a complex of mountain ranges feeding into the Amargosa River and its tributaries to provide a desert oasis for wildlife and humans since prehistoric times. This area provides the first trails and settlements of men and women from the east seeking ranching and farming opportunities in Southern California.

The south-central and southern area of public lands includes those lands from the Kingston and Mesquite Range on the north, between Nevada on the east, and six miles east of Baker or the Mojave National Preserve on the west to I-40 on the south. In this area the valleys and mountains become more gently rolling, elevation rises gently upward from the Baker sink on the west to the Halloran Summit and then tapers down somewhat to the Nevada border. This is a country of wider open spaces, more and larger dry lake beds, somewhat more consistent, but still very low rainfall that generally results in good fall and spring vegetation growth. This is desert tortoise habitat. Primary land uses are grazing, mining, and major transportation and utility corridors.

---

<sup>1</sup> The Planning Area also includes a very small portion of land in Nevada that is entirely within the Death Valley National Park (DVNP), which is described and analyzed in a separate planning document specific to DVNP.



## 3.1 VEGETATION

### 3.1.1 GENERAL VEGETATION

The vegetation within the Planning Area is divided into the Mojave Desert and Great Basin subprovinces as classified by *A Manual to California Vegetation* (Sawyer and Keeler-Wolf 1995). The Mojave Desert covers most of the Planning Area and the Great Basin covers less than ten percent of the total area. Most of the vegetation of the Planning Area can be classified within Creosote bush/white bursage, Creosote bush scrub, Mixed saltbush, Joshua tree, Blackbush, and Mojave yucca vegetation series. Fremont cottonwood, Mixed willow, Black willow, and Water birch series do not cover large areas, but the structure and variety of plants and the variety animals found in these series make them a significant resource to maintain.

The 18 grazing allotments administered by BLM (See Chapter 7, Figure 2) have numerous vegetation series. Refer to Table 3-1 for a list of the most abundant of the series in the allotments.

**Table 3-1: Vegetation**

Allotment Name	Vegetation Series	Allotment Name	Vegetation Series
Clark Mountain	Creosote bush-white bursage; Creosote bush; Hop-sage; Indian Ricegrass	Crescent Peak	Desert needlegrass; Joshua tree;
Deep Springs	Creosote bush-white bursage; Winterfat; Greasewood; Hopsage; Combination of Fremont cottonwood, mixed willow, and water birch	Eureka Valley	Creosote bush-white bursage; Winterfat Greasewood
Fish Lake Valley	Creosote bush-white bursage; Greasewood; Hopsage	Horsethief Springs	Creosote bush-white bursage; Creosote bush; Nolina; Mojave yucca
Hunter Mountain	Creosote bush-white bursage; Greasewood; Joshua tree; Mixed saltbush; California Juniper	Jean Lake	Big galleta
Kessler Springs	Big galleta; Creosote bush;	Oasis Ranch	Creosote bush-white bursage; Winterfat; Greasewood; Hopsage; Combination of Fremont cottonwood, mixed willow, and water birch (riparian)
Last Chance	Creosote bush-white bursage; Winterfat; Greasewood; Hopsage; California Juniper	Piute Valley	Creosote bush; Mojave yucca; Creosote bush-white bursage; Mesquite
Pahrump Valley	Creosote bush; Creosote bush-white bursage; Allscale	Valley View	Creosote bush; Mojave yucca
South Oasis	Creosote bush-white bursage; Greasewood; Joshua tree; Mixed saltbush; hopsage	Whitewolf	Creosote bush-white bursage; Greasewood; Hopsage
Valley Wells	Creosote bush; Mojave yucca		

The NEMO Planning Area contains a number of Unusual Plant Assemblages (UPAs) designated in the CDCA Plan for emphasis in the environmental review process and for special monitoring attention. UPAs in areas affected by the NEMO planing effort include Salt and Brackish Marsh (near Carson Slough), Valley Well Shadscale Scrub (in Shadow



Valley), Piute Valley Smoke Tree Assemblage in Piute Valley, and Riparian and River Bottomland along the Amargosa River and in the Inyo Mountains and Panamint Range.

### 3.1.2 SPECIAL STATUS PLANTS

Two federally-listed plant species - Amargosa niterwort (endangered) and Ash Meadows gumplant (threatened) - are known to occur on BLM lands in the Planning Area; critical habitat has been designated for both species in the Carson Slough area. (See Chapter 7, Figure 10) The two critical habitat units are separated by a 1.2 mile-wide stretch of public lands, and both units, as well as the area between these units, are suspected to support the federally-listed threatened spring-loving centaury. In addition, two other State-listed plant species and 23 BLM California sensitive plant species occur or potentially occur in the NEMO Planning Area. See Appendix I for a complete list of the special status plant species.

Often, special status plants are associated with unusual soils or a series of particular site conditions creating unusual microhabitats. For example, special status plants are often found in the Planning Area in the presence of limestone outcrops, granitic boulders, calcareous or dolomitic soils, or conditions conducive to perennial soil hydration (e.g., alkaline meadows and playas, desert springs and riparian areas).

The Clark Range, Kingston Range and Mesquite Mountain, as well as the Amargosa River Basin and Lower Carson Slough, are focal areas for a number of special status plants. Additionally, several High Sierran-influenced canyons and peaks in the Inyo and Panamint Mountains, notably Pleasant and Wildrose Canyons, in the latter range, and around the Cerro Gordo Peak area, in the former mountain range contain an unusually high number of special status plants.

The MUC M designated area at the south end of the Inyo Mountains contains several special status plant species, including: Inyo hulsea and Jaeger's caulostramina. Additionally, Panamint Mountains lupine is known from a MUC "M" area in the Panamint Mountains; other special status plant species are suspected to occur in this area as well.

### 3.1.3 BIOLOGICAL SOIL CRUSTS

In arid and semi-arid lands, the cover of vegetation is often sparse or absent. The soil surface in open spaces between the higher plants is generally not bare of life, but covered by a community of highly specialized organisms. These communities are referred to as biological soil crusts, or cryptogamic, cryptobiotic, microbiotic, or microphytic soil crusts (Harper and Marble 1988; West 1990). They may constitute up to 70% of the living cover in some plant communities (Belnap 1994), including in substantial portions of the NEMO Planning Area.

Biological soil crusts consist of cyanobacteria, green algae, lichens, mosses, microfungi, and other bacteria. Cyanobacterial and microfungal filaments weave throughout the top



few millimeters of soil, gluing loose soil particles together and forming a matrix which stabilizes and protects soil surfaces from erosive forces (Cameron, 1966; Belnap and Balun 1974; Friedman and Ocampo-Paus 1976; Belnap and Gardner 1993).

Biological soil crusts conduct many important functions in arid and semi-arid lands. In the large interspaces between plants biological soil crusts are an important source of fixed carbon. Interspace soils between plants are often stabilized by biological soil crusts. Biological soil crusts protect soils from both wind and water erosion by binding the soil particles. Cyanobacteria and cyanolichens can be an important source of fixed nitrogen for plants and soils in desert ecosystems (Evans and Ehleringer 1993).

### 3.1.4 RIPARIAN/WETLAND

In recent years, there has been increasing awareness and understanding of the economic benefits of wetland areas. Healthy wetland systems purify water as it moves through the vegetation and act like a sponge by retaining water in stream banks and ground water aquifers. Wetland areas can absorb and dissipate much of the energy of floodwaters.

Wetland-riparian vegetation is dependent upon the water provided either by the running water of rivers, streams, and large springs (*lotic* habitat) or by the standing water of lakes, ponds, seeps, bogs, small springs and meadows (*lentic* habitat). The vegetation of riparian-wetland areas usually contrasts sharply with the vegetation of the adjacent uplands. Although the area covered by wetland-riparian vegetation is small compared to upland vegetation, the importance of this vegetation to a variety of resources is well recognized. For example, more species and greater numbers of wildlife are found in riparian environments than in any other habitat type (Kattelman and Embury 1996; Thomas et al. 1979; Kauffman and Krueger 1984; Schulz and Leininger 1991). Wetland-riparian vegetation provides important sources of forage for domestic livestock (Clary and Webster 1990). Riparian vegetation is very important to the proper functioning of the adjacent stream, providing shading and adding chemical energy and nitrogen through the plant materials and insects that fall into the stream (Kattelman and Embury 1996; Meehan et al. 1977; Cummins et al. 1989). Riparian vegetation protects stream banks from erosion and traps sediments and nutrients coming from upstream, thereby ensuring high water quality (Kattelman and Embury 1996). Healthy stands of riparian vegetation can ameliorate the adverse effects of upslope disturbances (Schlosser and Karr 1981).

Temporal variation in wetland-riparian vegetation occurs in response to disturbance. Natural disturbances due to flooding are common in riparian habitats. The degree of change to the vegetation in response to floods depends upon the severity of an individual flood and the condition of the riparian vegetation at the time of the flood. Very severe floods can remove much of the vegetation. When this occurs the vegetation progresses through a series of different successional stages until a relatively stable stage is reached. Manning and Padgett (1995) provide an excellent description of community types and successional pathways of riparian areas in the Great Basin.



Wetland areas also are focal points for recreation, including fishing, hunting, camping, boating, hiking, nature observation, photography, and picnicking. Many of these activities associated with wetland areas generate high economic values.

Riparian communities occur near desert springs and along flowing streams and are of special interest. Under the CDCA Plan all riparian areas in the Planning Area are designated as Unusual Plant Assemblages (UPAs), which are to be given special consideration in management decisions.

The amount of scientific data and history of BLM managed wetland habitats varies greatly by location. The best information available on wetland habitats for this EIS is Functioning Condition Assessment data. (See Appendix J) There are three categories of functioning condition: 1) proper functioning condition, 2) functioning-at-risk condition, and 3) non-functional condition. Detailed definitions of these categories are available in BLM's Technical References 1737-9 and 1737-11.

Many of the desert spring riparian areas within the NEMO Planning Area have been rated as non-functional or functioning-at-risk (Refer to Appendix J), primarily resulting from water diversion, weed establishment, vehicle use, mining, burro use or livestock grazing. Many riparian riverine segments have similarly been rated as functioning-at-risk due to upstream water use, groundwater overdraft and/or exotic plant (saltcedar or *Tamarix ramosissima*) establishment.

The major stream channel and riparian attributes that are assessed when determining functional condition are hydrologic, vegetative, and soils/erosion. Land uses can impact all of these attributes. For example, livestock could consume enough of the streambank vegetation that there would not be adequate vegetation cover to protect stream banks during high flows. If a stream is not rock armored along its banks and there is not adequate vegetation, the stream bank and associated riparian habitat may erode into the stream channel during high flows. This erosion/sediment might be more than the stream channel could handle and cause the channel to decrease in depth and widen. If a stream channel does not have the correct width/depth ratio for the landscape setting in which it occurs, then the stream cannot provide the proper habitat for the fish, amphibians, insects, etc., that should occur in that stream.

### **3.1.5 NON-NATIVE INVASIVE PLANTS**

A number of weeds are of concern in the Planning Area. Mustards and thistles are present and take advantage of favorable weather conditions. Tree of Heaven (*Ailanthus altissima*) and African rue (*Peganum harmala*) are known to occur in a few sites, and believed to occur elsewhere. Filaree (*Erodium cicutarium*), red brome (*Bromus rubens*), and Mediterranean split grass (*Schismus barbatus*) can be found throughout the Planning Area at varying densities based on weather conditions. Black Locust (*Robinia pseudoacacia*) and Honeylocust (*Gleditsia triacanthos*), which both infest spring-fed riparian areas in the same manner as Tree of Heaven greatly impact critical spring-fed riparian areas, and replace native vegetation. Both are known to occur at many old



mining sites in the Planning Area. Halogeton (*Halogeton glomeratus*) infests a small area on either side of Interstate 15 several miles east of the rest stop in Shadow Valley and it appears not to be spreading. Tamarisk (salt cedar) (*Tamarix ramosissima*) is of great concern because it easily spreads in riparian or wetland areas and if not treated with prescribed burning, mechanical methods, or herbicides it will eventually be the only vegetation to occupy the site. Athel Trees (*Tamarix aphylla*) is not considered an invasive, but can cause problems at spring sites due to the tremendous amount of water they use and transpire into the atmosphere. This has been a problem at several sensitive fish habitats in the planning area. Other than tamarisk (salt cedar), most weed control efforts have been limited. Most weeds, other than salt cedar, take advantage of wetter years and native plants appear to have the advantage during drier years.

## 3.2 WILDLIFE

The complex combination of soil types, topography, vegetative communities and climatic conditions found in the Planning Area supports numerous wildlife habitats and many endemic (i.e., found only here) animal species. The Planning Area is well known for its species diversity, particularly of reptiles, neotropical migratory birds, small mammals and aquatic insects. Major wildlife habitats or special habitat features in the Planning Area, in addition to the plant communities listed previously, include: sand dunes, rocky outcrops, talus slopes, cliffs, mineshafts, adits, streams, and spring pools.

### 3.2.1 GENERAL WILDLIFE

Over 35 reptile species are known to occur within Planning Area, with representative species including the Western Whiptail Lizard (*Cnemidophorus tigris*), Zebra-tailed Lizard (*Callisaurus draconoides*), Side-blotched Lizard (*Uta stansburiana*), Desert Iguana (*Dipsosaurus dorsalis*), Chuckwalla (*Sauromalus obesus*), Sidewinder Rattlesnake (*Crotalus cerastes*) and Speckled Rattlesnake (*Crotalus mitchelli*). Seven amphibian species are also known to inhabit some of the springs, streams and moist areas found in the planning area. These include the Inyo Mountains Slender Salamander (*Batrachoseps campii*), Red-spotted Toad (*Bufo punctatus*), Western Toad (*Bufo boreas*), Great Basin Spadefoot Toad (*Scaphiopus intermontanus*), Pacific Tree Frog (*Hyla regilla*), Leopard Frog (*Rana pipiens*) and Bullfrog (*Rana catesbeiana*). However, the latter species is an introduced, non-native species. The presence of a eighth species, the Amargosa Toad (*Bufo boreas nelsoni*) is also suspected.

The many varied habitats which occur within the Planning Area also support over 150 avian species, most of which are classified as neotropical migratory birds. Some habitats support both nesting and migratory use, whereas others, particularly riparian areas, support extensive migratory use.

Horned Lark (*Eremophila alpestris*), Greater Roadrunner (*Geococcyx californianus*), Le Contes Thrasher (*Toxostoma lecontei*), Black-throated Sparrow (*Amphispiza bilineata*) and Common Raven (*Corvus corax*) are known to occur throughout the Planning Area, particularly in Creosote Bush (*Larrea tridentata*) Scrub and Joshua Tree (*Yucca*



*brevifolia*) plant communities. Phainopepla (*Phainopepla nitens*), Yellow Warbler (*Dendroica petechia*), Verdin (*Auriparus flaviceps*) and Gambel's Quail (*Callipepla gambelii*) are common to Mesquite (*Prosopis* spp.) Bosques in the region; whereas Northern Flicker (*Colaptes auratus*), Blue Grosbeak (*Guiraca caerulea*), Ladder-backed Woodpecker (*Picoides scalaris*), Ash-throated Flycatcher (*Myiarchus cinerascens*) and Western Kingbird (*Tyrannus verticalis*) frequent Willow (*Salix* spp.) and Cottonwood (*Populus fremontii*) dominated riparian areas.

Bewick's Wren (*Thryomanes bewickii*), Blue-gray Gnatcatcher (*Polioptila caerulea*) and Long-eared Owl (*Asio otus*) are known from wash habitats that support heavy shrub cover; whereas Say's Phoebe (*Sayornis saya*), Rock Wren (*Salpinctes obsoletus*) and Canyon Wren (*Catherpes mexicanus*) are common to less vegetated canyons. Foothill areas supporting Pinyon (*Pinus monophylla*) and Juniper (*Juniperus* spp.) stands support birds such as Bushtit (*Psaltiriparus minimus*), Yellow-rumped Warbler (*Dendroica coronata*), Scrub Jay (*Aphelocoma coerulescens*) and Pinyon Jay (*Gymnorhinus cyanocephalus*). In forested mountains, the White-breasted Nuthatch (*Sitta pygmaea*), Mountain chickadee (*Parus gambeli*), Townsend's Solitaire (*Myadestes townsendi*) and Great Horned Owl (*Bubo virginianus*) are known to occur. Raptors with large territories, such as Prairie Falcon (*Falco mexicanus*) and Golden Eagle (*Aquila chrysaetos*), can range over all these habitats, but suitable nesting sites are usually limited to cliff and canyon areas.

Numerous small mammals also call the Planning Area home. Representative species include Canyon, Cactus and Deer Mice (*Peromyscus* spp.); Botta's Pocket Gopher (*Thomomys bottae*), Antelope Ground Squirrel (*Ammospermophilus leucurus*) and Round-tailed Ground Squirrel (*Spermophilus tereticaudus*); Kangaroo Rats (*Dipodomys* spp.) and Pocket Mice (*Perognathus* spp.); and Black-tailed Hare (*Lepus californicus*), as well as Desert Cottontail (*Sylvilagus audubonii*). Large mammals common to the region include Badger (*Taxidea taxus*), Ringtail (*Bassariscus astutus*), Kit Fox (*Vulpes macrotis*), Bobcat (*Felis rufus*), Coyote (*Canis latrans*), Mountain Lion (*Felis concolor*) and Mule Deer (*Odocoileus hemionus*).

### 3.2.2 SPECIAL STATUS ANIMALS

State and federally-listed animals found on public lands in the Planning Area include the following:

- the State and federally-listed-threatened desert tortoise (*Gopherus agassizii*);
- the State and federally-listed endangered Amargosa vole (*Microtus californicus scirpensis*);
- the State and federally-listed endangered least bells vireo (*Vireo bellii pusillus*);
- the State and federally-listed endangered southwestern willow flycatcher (*Empidonax trailli extimus*);
- The State-listed endangered and federally-listed threatened Inyo California towhee (*Pipilo crissalis eremophila*)



- the State-listed endangered western yellow-billed cuckoo (*Coccyzus americanus occidentalis*);
- the State-listed threatened Mohave ground squirrel (*Spermophilus mohavensis*); and
- the State-listed threatened Swainson's hawk (*Buteo swainsoni*).

Several BLM-designated sensitive wildlife species also occur within the Planning Area. Sensitive wildlife species are generally associated with specialized habitats, such as desert bighorn sheep (*Ovis canadensis nelsoni*) and their preferred mountainous terrain; mineshaft, cliff and rock crevice-dwelling animals (eight bat species) and their extensive habitat in the Planning Area; western burrowing owl (*Athene cunicularia-hypugea*) and mixed Mojave woody scrublands or creosote bush scrublands; Amargosa River & tributary riparian-obligate species, such as the Amargosa pupfish (*Cyprinodon nevadensis amargosae*) and the Amargosa speckled dace (*Rhinichthys osculus amargosae*); the Mojave Fringe-toed Lizard (*Uma scoparia*), and its limited sand dune habitat; Gila Monster (*Heloderma suspectum*), and its patchy succulent scrub-canyon habitat and the endemic Shoshone cave whip-scorpion (*Trithyreus shoshonensis*) and its unique subterranean habitat.

Refer to Appendix I (Special Status Species) for a complete description of listed, sensitive and special concern species occurring within the NEMO Planning Area. A complete list of known species (in 1980), which occur within the Planning Area, is found in the *California Desert Conservation Area Plan, Final Environmental Impact Statement and Proposed Plan*, **Appendix IX: Wildlife** and **Appendix X: Vegetation**.

The remainder of the discussion of biological resources focuses on specific listed or sensitive species affected by one or more proposed amendments. Some of the NEMO proposals are specifically aimed at addressing the needs of rare or declining species.

### 3.2.3 DESERT TORTOISE

There are five distinct geographical areas of desert tortoise habitat in the Planning Area which were identified upon BLM delineation of desert tortoise categories in 1993. These include:

- Piute-Fenner Valley;
- Ivanpah Valley;
- Northern Ivanpah Valley;
- Shadow Valley; and
- Pahrump Valley.

Three of these five areas - Piute-Fenner Valley, Ivanpah Valley, and Shadow Valley - include critical habitat. Critical habitat was identified by USFWS in 1994, and it constitutes their assessment at that time of the lands that are essential to achieve recovery. All of Piute-Fenner, Ivanpah, Northern Ivanpah, and Shadow Valleys are designated by BLM as Category I desert tortoise habitat. BLM's goal for Category I desert tortoise



habitat is to maintain a viable population of tortoises. Pahrump Valley is BLM Category III desert tortoise habitat; the goal there is to mitigate impacts to the extent possible.

Populations have declined precipitously in many parts of the range, but populations in NEMO vary from stable to declining. Threats to populations include habitat loss, diseases, excessive predation on young tortoises by ravens, collecting, shooting, vehicle kills, and other factors.

### **3.2.4 AMARGOSA VOLE**

Critical habitat for the Amargosa vole, a small rodent, has been designated (Federal Register Volume 49, No. 222, 1984) and includes approximately 2,440 acres of public land. Located along the Amargosa River between the towns of Shoshone and Tecopa, California, critical habitat primarily encompasses lands in the Grimshaw Lake Natural Area ACEC vicinity and immediately south. Additional suitable riparian habitat for the vole occurs on both public and private lands located to the south in the Amargosa Canyon Natural Area ACEC and to the north as far upstream as the town of Shoshone. The public and private lands between the two existing ACECs form a critical link between the two natural ACECs protecting the species.

### **3.2.5 NORTH MOJAVE DESERT BATS**

The Planning Area supports at least nine different bat species, eight of which are designated as California BLM sensitive species (see Appendix I). Bats use both natural habitat features, such as rock crevices, rocky outcrops, cliffs, caves, desert washes and riparian and human-created habitat features, such as historic mine-workings, mineshafts, adits and abandoned buildings. The Amargosa River and its tributaries (China Ranch Wash, Salt Creek), together with the Kingston Mountain-Silurian Hills-Kingston Wash area, represent a bat concentration area in the Planning Area.

The Silurian Hills is a semi-mountainous region located in Silurian Valley. It is bounded on the west by a flat plain, Silurian Dry Lake and Salt Creek; on the east by a flat plain and the Shadow Mountains, on the north by Kingston Wash and Valjean Dunes, and on the south by the Hollow Hills Wilderness. Public lands in this area total approximately 7,400 acres, with a scattering of private lands located immediately to the south. Mining occurs on some of the private parcels. Numerous cliff faces and crevice slopes are common in the Silurian Hills. Mine shafts and adits are also quite numerous, and at least four bat species are known to use these shafts and adits as roosting, hibernation or maternity sites. Additional bat species are suspected to use the area as well.

Habitats crucial for a wide variety of desert bat species surround Silurian Hills, i.e., desert washes, springs, desert riparian areas, sand dunes, crevice slopes, wide plains and mountains. The Kingston Wash is suspected to be a major bat foraging area and flight travel corridor into the Kingston Mountains. The Salt Creek Hills and riparian area are both a major bat foraging and roosting area and are suspected to serve as a crucial flight travel corridor into the Avawatz Mountains where numerous spring foraging and roosting



sites occur. This same corridor is also important for bat species that use the Ibex Dunes and Dumont Dunes.

### 3.2.6 INYO MOUNTAINS SLENDER SALAMANDER

Amphibians are rare in the desert as they depend on pools and streams for reproduction. The Inyo Mountains slender salamander (*Batrachoseps campi*) is an uncommon species known only from several canyons of the west and east slopes of the Inyo Mountains. They are associated with permanent springs or seepage, primarily below the pinyon-juniper belt where they reside under rocks on moist soil in shaded, steep-walled canyons (Morey 1988). Giuliani (1976) found the Inyo Mountains slender salamander in a majority of the canyons on the east slope of the Inyo Mountains, including Hunter and Craig Canyons and Willow Creek.

### 3.2.7 INYO CALIFORNIA TOWHEE

The total known range of the Inyo California towhee lies in the southern Argus Range at elevations ranging from 2,680 ft. to 5,630 ft. The Inyo California towhee was listed as a State endangered species and a federally threatened species under the Endangered Species Act due to the small population, its restricted range, and the potential destruction of its habitat. (LaBerteaux and Garlinger 1998). Potential threats to its habitat include wild burros and horses, mining, recreational activities, cattle grazing, water exportation, and encroachment by rural residents.

Critical habitat (5,802 acres) was designated for the towhee in 1987. It includes riparian habitat at springs as well as upland and streambed habitats surrounding the springs. Only a small portion (less than 5%) of towhee critical habitat occurs within the NEMO Planning Area; the majority of the critical habitat occurs to the south and west, within the West Mojave Planning Area.

The following discussion of habitat for the Inyo California towhee is taken from The Recovery Plan for the Inyo California Towhee (U.S. Fish and Wildlife Service. 1998):

Inyo California towhees nest and forage in areas of dense riparian vegetation dominated by willows (*Salix* spp), Fremont cottonwood (*Populus fremontii*), and desert olive (*Forestiera neomexicana*) with associated rubber rabbit brush (*Chrysothamnus nauseosus*) and squaw waterweed (*Baccharis sergiloides*). They also nest in shrubs of the upland community adjacent to riparian habitat and use the upland habitat as their principal foraging grounds. This habitat consists of Mojave creosote bush (*Larrea tridentata*) scrub or Mojave mixed woody scrub. (LaBerteaux 1994).

LaBerteaux and Garlinger (1998) conducted an Inyo California towhee survey during the 1998-breeding season. A total of 640 adult towhees representing an estimated 317 pairs and 23 single adults were detected at 210 sites within the Argus Range. Prior to the 1998 survey, the towhee population was estimated to be no more than 200 individuals. Along



with an increase in the numbers of birds detected, the 1998 census documented a range expansion of 15 km to the north of the previous known range. Seventy-three percent of the population occurred on U.S. Navy lands, 25% on BLM lands on the east slopes of the Argus Range, and 2% on State-owned and private lands.

### 3.2.7 LEAST BELL'S VIREO

Least Bell's vireo (*Vireo bellii pusillus*) is a State and federally-listed endangered species. The vireo was federally-listed in 1986 and critical habitat was designated in February 1994. The NEMO Planning Area does not contain critical habitat for this species. At the time of listing, an estimated population of the least Bell's vireo was only 300 pairs (RECON 1989).

The least Bell's vireo is a small gray migratory songbird that has declined dramatically in both numbers and distribution. This subspecies was once widespread and abundant throughout the Central Valley and other low elevation riparian zones in California. Least Bell's vireo historically bred in riparian woodlands from the interior of northern California (near Red Bluff, Tehama County) to northwestern Baja California, Mexico. In 1973, no least Bell's vireos were found during an extensive search of their formerly occupied habitat between Tehama County and San Joaquin County (Gaines 1974) and, by 1980, the species was extirpated from the entire Central Valley (U.S. Fish and Wildlife Service 1998). Its current breeding distribution is restricted to a few localities in southern California and northwestern Baja California, Mexico (Franzreb 1989). There are breeding records for the southern Owens Valley of Inyo County and it regularly breeds at the South Fork of the Kern River Preserve (Heindel pers. comm.).

Least Bell's vireo nests primarily in willow (*Salix* spp.), but also uses a variety of other shrub and tree species for nest placement. Foraging occurs in riparian and adjoining upland habitats. Quality habitat occurs within the NEMO Planning Area, along the Amargosa River in San Bernadino County. The reduction of least Bell's vireo numbers and distribution is associated with widespread loss of riparian habitats and brood parasitism by the brown-headed cowbird (*Molothrus ater*). Habitat degradation characterized by changes in predator-prey relationships, livestock grazing, agricultural use, dam construction, fragmentation, isolation, pollution, and human disturbance is associated with habitat loss (Kus 1998). About 76 percent of the U.S. population is found at just five localities (Federal Register 1992).

Since federal listing and follow-up restoration and management activities, the species has undergone a population increase almost as dramatic as its decline (U.S. Fish and Wildlife Service 1998). The current breeding population of the least Bell's vireo in California consists of approximately 500 pairs (Federal Register 1992). In addition to population increases, observations indicate that the species is undergoing a northward expansion (Draft Riparian Bird Conservation Plan 1998). Currently, least Bell's vireos are recolonizing areas unoccupied for decades and have the potential to reestablish breeding population in the central and northern portions of their historical range (U.S. Fish and Wildlife Service 1998).



### 3.2.8 SOUTHWESTERN WILLOW FLYCATCHER

The southwestern willow flycatcher (*Empidonax traillii extimus*) is a federally endangered species. The final ruling listing the southwestern flycatcher as endangered was published in February 1995, although designation of critical habitat was postponed (USFWS 1995). It is currently known to breed at only about 75 sites in riparian areas throughout the southwest. The known breeding population is estimated at between 300 and 500 pairs. The southwestern willow flycatcher nests only in dense riparian vegetation associated with streams, rivers, lakes, springs, and other watercourses and wetlands.

The most significant historical factor in the decline of the southwestern willow flycatcher is the extensive loss, fragmentation, and modification of riparian breeding habitat. Large-scale losses of wetlands have occurred, particularly the cottonwood-willow riparian habitat of the southwestern willow flycatcher (Phillips et al. 1964, Johnson and Haight 1984, Katibah 1984, Johnson et al. 1987, Unitt 1987, General Accounting Office 1988, Dahl 1990, State of Arizona 1990). Habitat changes have occurred and continue to occur because of urban, recreational, and agricultural development, water diversion and impoundment, channelization, livestock grazing, and replacement of native habitats by introduced plant species. Fire danger in riparian systems may increase with the conversion from native to exotic vegetation (e.g. saltcedar), diversions or reductions of surface water and drawdown of local water tables.

Brood parasitism by the brown-headed cowbird is another significant and widespread threat to the southwestern willow flycatcher. Once a southwestern willow flycatcher nest is parasitized, it has almost no chance of producing flycatcher young, which may result only in the rearing of cowbird chicks (National Park Service Technical Report 1997). At the South Fork Kern River Preserve, an average of 63.5% of nests were parasitized from 1989 to 1992, with a range from 50% in 1989 to 80% in 1991 (Craig and Williams 1998). Trapping of brown-headed cowbirds has proven to be successful in decreasing the rate of parasitism and is a valuable tool that can be used as riparian habitat restoration proceeds.

### 3.2.9 SWAINSON'S HAWK

The Swainson's hawk is a California threatened species. Swainson's hawks were considered to be a common to abundant breeding species in California (Sharp 1902) at the end of the 19<sup>th</sup> century. By the early 1940s breeding population declines were being documented (Grinnell and Miller 1944). Bloom (1980) conducted the first statewide survey of Swainson's hawks in California in 1979 and estimated 110 nesting pairs and a total population of 375 pairs in California. These data revealed that the remaining population centers were in the Great Basin in the extreme northeastern portion of the state and in the Central Valley, and that the species was nearly extirpated throughout large parts of its former range. The declines were greatest in coastal southern California where Sharp (1902) had classified the species as abundant. In 1988, the total statewide population was estimated to be 550 breeding pairs. Additional surveys done in the 1990s indicate that the total statewide population is 500-1,000 breeding pairs. The difference in



numbers of breeding pairs between 1980 and the 1990s is thought to be the result of increased survey efforts and not a population increase.

The decline of Swainson's hawks in California has been attributed to mortality during migration and on the wintering grounds in South America; poisoning by toxic chemicals including pesticides in South America, eggshell thinning, habitat loss on wintering grounds, disturbance on breeding grounds, loss or degradation of habitat on the breeding grounds, and increased competition with other species. Habitat degradation could occur through a variety of mechanisms including but not limited to fires which eliminate nesting opportunities in Joshua trees and riparian trees, off-highway vehicle use which leads to a decrease in prey populations or affects the long-term recruitment of new nest trees, alteration of normal stream and wash hydrology leading to the loss of riparian habitat, lowering of water tables that leads to the loss of nesting habitat or contributes to a decline in prey availability, and shooting, which historically has contributed to the loss of birds (England 1998). Bloom (1980) estimated the historical population in the Mojave and Colorado Deserts at 270-1,080 pairs. Declines of the hawk in the Mojave Desert, according to Bloom, could be directly related to the decrease in the range of the Joshua tree. As the tree's range decreased (especially in the Antelope Valley), Swainson's hawk numbers probably decreased proportionately.

Historically, the Swainson's hawk breeding range in California included the Great Basin and Modoc Plateau, the Sacramento and San Joaquin Valleys, the coastline in Marin, Monterey, Ventura, Los Angeles, and San Diego counties, and a few scattered sites in the Colorado and Mojave deserts (Bloom 1980). Swainson's hawks nest almost exclusively in trees, but in a few instances have been recorded nesting on cliffs, coulees, human-built structures, and the ground, but these types of sites are rarely used (England et al. 1997). A survey of nesting birds in 1979 revealed that Swainson's hawks nested almost exclusively in large, sparsely vegetated flatlands characterized by valleys, plateaus, broad floodplains, and large expanses of desert.

Typical habitat for the Swainson's hawk is open desert, grassland, or cropland containing scattered, large trees or small groves where they prey upon a variety of mammals including bats, birds, lizards, snakes, amphibians, and insects. The specific prey species vary from location to location, but are generally dominated by ground squirrels, jackrabbits, cottontails, mice, gophers, and birds, such as mourning dove, during the breeding season. Insects are an important part of the diet outside of the breeding season, and Swainson's hawks consume dragonflies, crickets, and grasshoppers.

### **3.2.10 WESTERN YELLOW-BILLED CUCKOO**

The yellow-billed cuckoo (*Coccyzus americanus occidentalis*) is a California endangered species. A statewide survey of yellow-billed cuckoos in California conducted during 1986 and 1987 found a total of 30-33 pairs and 31 unmated males at nine localities (Laymon and Halterman 1989). More recent surveys on the Sacramento River from 1988-1990 have shown a fluctuating population of 23-35 pairs depending on the year (Halterman 1991). Continuous surveys on the South Fork of the Kern River from 1985-1996 have shown a population that varied from a low of 2 pairs in 1990 to a high of 24 pairs in 1992 (Laymon et al. 1997). These two sites are



the only localities in California that sustain breeding populations of yellow-billed cuckoos. Small and unstable breeding populations are found along the Amargosa River near Tecopa and at several locations in the Owens Valley.

Yellow-billed cuckoos have one of the most restrictive suites of macro-habitat requirements of any bird species. They inhabit extensive deciduous riparian thickets or forests with dense, low-level or understory foliage, and which abut on slow-moving watercourses, backwaters, or seeps. Willow is almost always a dominant component of the vegetation. They may inhabit mesquite thickets when willow is absent. Nesting typically occurs in sites with at least some willow, dense low-level or understory foliage, high humidity, and wooded foraging spaces in excess of 300 feet in width and 25 acres in area. Nesting sites with less than 40% canopy closure are unsuitable, those with greater than 65% are optimal (Laymon 1998). In California, they are confined during the breeding season to cottonwood-willow riparian habitat (Laymon 1998). Cuckoos have large home ranges, often exceeding 50 acres and sometimes approaching 100 acres in extent (Laymon and Halterman 1985).

The cause of decline of yellow-billed cuckoos both historically and recently is primarily from habitat loss on the breeding grounds in California. Habitat loss has occurred due to clearing for agriculture, clearing for flood control, flooding behind dams, withdrawal of ground water causing a lowering of the water table, clearing for urban and suburban development, invasion by exotic vegetation (black walnut [*Juglans californica*], edible fig [*Ficus carica*], salt cedar [*tamarisk sp.*], giant reed [*Arundo donax*]), pesticides (especially larvacides used in mosquito control), and long-term (greater than 100 years) intensive year-round grazing (Laymon 1998). Important temporary losses of riparian habitat are caused by firewood cutting and wildfire.

### 3.3 SOIL, WATER AND AIR RESOURCES

#### 3.3.1 SOIL

The soils in the NEMO Planning Area are as varied as the land forms, microclimates and geology of the region. Soil surveys have been conducted in the Saline Valley area and the Kingston-Amargosa areas, but most of the soils in the NEMO Planning Area have not been formally surveyed. Most soils in the area are poorly developed and are generally well drained and coarse textured. Some portions of the Planning Area are internally drained resulting in a number of small playas with surface clays, surface physical soil crusts and increased salinity. The soil depth ranges from deeper alluvial materials to very shallow or non-existent depth over the rocky substrate. The soils are susceptible to accelerated erosion from wind and water especially when the surface has been disturbed. Portions of the soils have been subject to periodic disturbance due to grazing, mining, agriculture, OHV activity and other resource uses.

The California Desert Conservation Area plan classified the desert soils into sensitivity classes. These classes were based on surface texture, slope, rocks topography and other factors, which affect soil sensitivity to surface disturbance. The CDCA Plan classified a



majority of the soils in the northwest portion of the NEMO Planning Area in the high sensitivity class with most of the remaining soils in the medium class. Soils in the eastern and southeastern portions of the NEMO Planning Area are nearly evenly split between a high and medium classification. There are small sections of low sensitivity soils spread through the entire Planning Area.

### 3.3.2 WATER

Groundwater and surface water sources occur throughout the NEMO Planning Area. A large number of surface water sources exist within the northwestern portion of the Planning Area where most mountain ranges reach over 10,000 feet elevation and include numerous streams, springs, seeps, and a lake. Perennial streams exist in Middle Park, Pleasant, Happy, Surprise, Hall and Jail Canyons in the Panamint mountains, Water, Knight, Revenue, Snow and Thompson Canyons in the Argus Range, Daisy, Craig, Hunter, Beverage, Keynot, Mc Elvoy, Pat Keys and Willow Creek Canyons in the Inyo Mountains and Weyman, Cottonwood, Toler, McAfee and Perry Akin Canyons in the White Mountains. Weyman, Cottonwood, McAfee and Perry Akin Creeks all support trout fisheries and are diverted near their mouth for irrigation. Several large springs occur on private land in Deep Springs Valley. Corral Spring has a very large flow and is one of the major sources of water for Deep Springs Lake, which covers nearly 2,000 acres and includes an associated wetland, which is habitat for the black toad. The eastern and southeastern portion of the NEMO Planning Area also has a number of significant water sources including the Amargosa River, Willow Creek, Grimshaw Lake, Salt Creek and Tecopa Hot Springs.

The Amargosa River is the focal hydrologic system of the Northern and Eastern Mojave Desert (NEMO) Planning Area. The hydrologic systems of the southern Great Basin and northern Mojave Desert are generally characterized by deep water tables. They are also considered primarily closed groundwater basins. One of only two large rivers in the Mojave Desert, the free-flowing Amargosa River includes perennial and ephemeral surface flows as well as subterranean flows.

Water runoff from the Bullfrog Hills, Yucca Mountain, Shoshone and Spring Mountains, in Nevada, all contribute to Amargosa River water flow in California. Major river tributaries include the aforementioned Lower Carson Slough in the northern reach of the river, China Ranch Wash in the central reach, and Salt Creek in the south.

Approximately 94% of the lands along the river in California are in Federal ownership. Portions of this river have been determined eligible for Wild and Scenic Rivers System suitability (see Appendix O).

Groundwater occurs in nearly all of the valley basins in the Planning Area. These ground waters vary greatly in depth, quantity and quality. A portion of this water comes from current recharge from the surrounding mountains and old water deposited during the fluvial lake period (10,000 years ago). For many of the basins the current recharge rate is low. Groundwater withdrawals from these basins can result in large draw-downs in the basins. Portions of the Amargosa Valley are underlain by a regional carbonate rock



aquifer. This large aquifer transports large volumes of water under mountain ranges in the area and collects water from many widespread watersheds. Major springs occur along this carbonate aquifer system including Ash Meadows Springs which annually discharges 17,000 acre-feet of water and the Furnace Creek springs which produce 5 cubic feet per second (3,500 acre-feet per year). Discharges from this carbonate rock aquifer are the source of water for Devils Hole and the Lower Carson Slough. Water withdrawals from the Amargosa Valley Death Valley Junction area could impact the flows at Ash Meadows and Furnace Creek. Currently, commercial ground water pumping is occurring in Fish Lake Valley, Ash Meadows, Pahrump Valley and Ivanpah Valley.

The unified watershed assessment conducted in preparation of the Clean Water Action Plan (1998) classified the watersheds into one of four categories. These four are:

- Category I - Watersheds that are candidates for increased restoration activities due to impaired water quality.
- Category II- Watersheds with good water quality that, through regular program activities can be sustained and improved.
- Category III- Watersheds with pristine or sensitive areas on Federal, State or tribal lands that need protection.
- Category IV- Watersheds where more information is needed.

Within the NEMO Planning Area, the watersheds were classified as follows:

Category I Watersheds (Impaired)	Eureka-Saline Valleys Upper Amargosa Mojave (upper)
Category III Watersheds	Fish Lake-Soda Springs Valleys Ivanpah-Pahrump Valleys Death Valley-Central and Lower Amargosa Panamint Valley

### 3.3.3 AIR QUALITY

Much of the time, air quality throughout the NEMO plan area is good. There are, however, times that localized areas have not met national and State air quality standards due to locally generated and/or transported in pollutants. This has resulted in several areas within the NEMO Planning Area being classified as Federal and/or state nonattainment areas, including:

- portions of the NEMO Planning Area fall within the Federal Owens Valley PM<sub>10</sub> nonattainment area. The Owen Valley Area is one of six serious PM<sub>10</sub> nonattainment areas in the nation;
- portions of the Planning Area are within the Federal Mojave Desert ozone nonattainment area which covers northeastern San Bernardino County; and
- portions of the Planning Area that lie within San Bernardino County are within the Federal San Bernardino County PM<sub>10</sub> Nonattainment Area.



Air districts are required to develop a plan with an implementation schedule for both State and Federal non-attainment areas. These plans identify and quantify sources of emissions and presents a comprehensive strategy to control and reduce locally generated emissions. The management and enforcement of the Clean Air Act's air quality standards in the NEMO area is conducted by two entities, the Mojave Desert Air Quality Management District and the Great Basin Unified Air Pollution control District. The former includes the desert portion of San Bernardino County and the Palo Verde Valley portion of Riverside County (within the Mojave Desert Air Basin) and the latter includes Inyo and Mono Counties (within the Great Basin Valley Air Basin).

### **3.4 CULTURAL AND NATIVE AMERICAN RESOURCES**

Numerous sites within the boundaries of the Planning Area have been listed on or determined eligible for inclusion on the National Register of Historic Places (NRHP). In addition several sites are listed as California Historic Landmarks (CHL) and California Points of Historic Interest (CPHI). Sites listed on the CHL and CPHI may or may not have been evaluated for NRHP; several were identified as historic landmarks as a consequence of eligibility evaluations. Several archaeological sites have been determined eligible for inclusion on the National Register of Historic Places due to their potential to yield information important to prehistory and history. The locations of these sites are confidential. Old Traction Road and 20-Mule Team Road also cross the Planning Area and are potentially eligible for inclusion on the NRHP. Both sites were identified as sites of concern during NEMO public scoping.

Ethnographic studies (Bob Laidlaw et al.) of tribal distributions were completed for all of CDCA as part of CDCA Plan. The NEMO cultural analysis tiers off of these CDCA Plan studies. At European contact, circa 1776 with the crossing of the Mojave Desert by the Spanish Franciscan priest Francisco Garces, the area was inhabited by various Yuman and Shoshonean peoples whose cultures were characterized by complex adaptations to the arid environment. These include the Serrano Indians who occupied the Mojave River Valley and San Bernardino Mountains during the Late Prehistoric until the Historic Era, the Mohave who occupied the Colorado River Valley and portions of the Mojave Desert adjacent to the river, Western Shoshone(Panamint/Koso and Timbisha Band), Kawaiisu and Southern Piute peoples who occupied portions of the Colorado River Valley, lands adjacent to Death Valley, Fort Irwin and Chemehuevi who occupied the Mojave Desert from the Colorado River to lands within the Mojave Preserve. All of the desert adapted peoples evidently practiced a hunting and gathering subsistence strategy, making the seasonal round, exploiting available plants, grass seed resources, acorns, and available mammals. They interacted with their neighbors and some type of trade existed, as evidenced by marine shell beads and obsidian utilized for lithic artifacts. In addition, the Mohave practiced limited agricultural in the flood plains of the Colorado River.



## IDENTIFIED SIGNIFICANT SITES

Property Name	Listed	Eligible	CHL	CPHI	Notes
CA-SBr-3186 (Baker vicinity)	X				(AKA Aboriginal Rock Cairn Site)
Paiute Pass Archaeological District	X				Mojave Preserve
Cerro Gordo National Historic District	X				
Death Valley Junction Historic District	X				Private land
National Old Trails Road (CA-SBr-2910H)		X			(AKA Route 66)
Mormon Road/Trail (Ca-SBr-4411H)		X			
AT & SF Railroad (CA-SBr-6693)		X			
Old Spanish Trail (CA-SBr-4272H)		X			
Tonapah & Tidewater Railroad (CA-INY-4772H)		X			(AKA CA-SBr-2340H)
Hoover Dam to San Bernardino Transmission Line		X			(CA-PSBr-38H)
Boulder Transmission Lines 1, 2, 3		X			(CA-SBr-7694H)
Mormon Road Monument (Ca-SBr-4411H)			X		
Harry Wade Exit route			X		
Searles Lake Borax Discovery Site			X		
National Old Trails Monument			X		
Von Schmidt State Boundary			X		
Mojave Road (CA-SBr-3033H)			X		
California/Arizona Desert Training Center Maneuver Area			X		
Camp Ibis (Desert Training Center)			X		(Patton Camps)
Lanfair				X	

## 3.5 WILD HORSE AND BURRO

Currently there are three Herd Management Areas (HMAs), that are managed for wild horses covering 2,262,771 acres and five HMAs managed for burros, covering 827,575 acres. (See Chapter 7, Figure 8a) There are two Herd Areas (HAs) in the NEMO Planning Area within the USFWS designated recovery units (Dead and Clark Mountain Herd Areas). The Dead Mountain HA is in the proposed Piute-Fenner unit of the identified Desert Tortoise Wildlife Management Area. The CDCA Plan set a management prescription of zero (0) burros for this HA. The current population is estimated at 16 burros. The western portion of the Clark Mountain HA was designated as an HMA in the CDCA Plan. This HMA has a Herd Concentration Area (#27) located within the boundaries of the proposed Shadow Valley ACEC. It has an established AML of 44 burros (371 AUMs) and management is set forth in the East Mojave HMA Plan.

Herd Areas become Herd Management Areas (HMAs) when the decision has been made that wild horses and/or burros can be managed for the long term within the habitat. The decision that a Herd Area should receive long-term wild horse and burro management is accomplished through the land use planning process by designating the area as a HMA. Upon designation as a HMA, wild horses and burros shall be managed as an integral component of the public lands on the basis of multiple use and in a manner that maintains an ecological balance.

The Clark Mountain HMA is mostly within the Valley Wells Cattle Grazing Allotment. This allotment comprises 223,007 acres of public land with a carrying capacity from the CDCA Plan adjusted for the loss of NPS acreage of 5,011 AUMs, 4,640 of which are



currently allocated to cattle use. The rangeland health assessment performed in 1999 for the Valley Wells Allotment determined that continued cattle use and heavy use by burros would degrade the quality of vegetation to the point that the Native Species standard may fail to be attained in the near future. It concluded that the grazing was occurring above the proper use level for key plant species, which was attributed to an overpopulation of burros. In June 1999, 156 burros were removed from the Clark Mountain HMA, leaving an estimated population of 140 burros. The gathered burros are placed in the BLM's National Wild Horse and Burro Adoption Program.

HMAs cover only BLM managed lands, but horses and burros wander across jurisdictional boundaries. NPS-managed, other Federal and private lands may have wild horses and burros on them. The current management situation is summarized in Appendix K, with existing censuses of animals and target population levels. The Appendix does not include four formerly BLM-administered HMAs, which are now under NPS jurisdiction (listed in Appendix M, summarizing changes made by the CDPA).

### **3.6 CATTLE GRAZING (and Allotments)**

There are 17 cattle allotments (a designated area suitable for grazing) within the NEMO Planning Area. There are eight allotments located within the Ridgecrest Resource Area, nine are located within the Needles Resource Area, and one is located within the Barstow Resource Area. With the passage of the CDPA, three allotments have portions located in Death Valley National Park, and eight allotments have portions located in the Mojave National Preserve. Colton Hills, Round Valley, and Gold Valley Allotments were completely administered by the BLM, but after enactment of CDPA the NPS solely administers these allotments in the Mojave National Preserve. On March 1, 2000 the Granite Mountain Allotment and on 13 November 2000, the Lanfair Valley Allotment was terminated by amendment to the CDCA Plan.

The allotments located within the Planning Area are classified as Section 15 grazing leases in accordance with the Taylor Grazing Act. Allotments with perennial forage have an established limit of forage based on the quality and quantity of perennial plants, stated in animal unit months (AUMs) for a defined period of grazing use. An AUM is a measure of perennial or ephemeral feed that will support a cow and its calf or a bull for one month. Perennial forage use is typically authorized to be consumed at the same level from year to year unless forage production does not meet seasonal norms. In contrast, grazing use in allotments with ephemeral forage do not have an established level or specified period of use. Instead the amount and length of grazing use is determined just prior to authorizing the grazing.

Typically, grazing is authorized by the BLM in the Planning Area by lease for a period of 10 years. A shorter period of time is sometimes issued for special circumstances, such as to accommodate a shorter term lease of the base property or when the Authorized Officer determines that a shorter term authorization is in the best interest of range management. Additionally, non-renewable grazing authorizations may be issued for special short-term



needs such as trailing, or when there is short-term surplus forage available for grazing. All leases are subject to modifications and to annual adjustments. These are implemented through consultation between the lessee and the BLM.

The lease identifies the number, kind and/or type of livestock that may graze the allotment, and the grazing period (usually with specific beginning and ending dates). In addition, many leases also require adherence to prescribed grazing prescriptions in the form of grazing systems such as deferred, deferred-rotation, or rest-rotation. Other authorizations may have conditions pertaining to turn-out dates based on vegetation conditions. Some leases have specific grazing utilization standards and other specified conditions to protect site-specific areas, such as riparian areas, wildlife habitat, special status plant populations, etc. Usually these conditions have been developed in consultation and cooperation between BLM and the livestock operator in the form of an allotment management plan or other planning effort.

Often there are occasions when the lessee elects to graze less than the full amount of grazing authorized for the grazing season. Sometimes this is due to environmentally related factors such as droughts or fires, and in other cases it may be to accommodate the livestock operator's needs to adjust livestock numbers for marketing or livestock husbandry purposes. Normally the BLM will authorize the requested amount of non-use on a short-term basis. In some situations the BLM may temporarily authorize another qualified applicant to graze the amount of authorized non-use in an allotment, but this is seldom done.

About 60 percent of the allotments have Allotment Management Plans (AMP). Most of the AMPs are in the Needles Resource Area. Nine of the eighteen allotments are jointly-administered by BLM and NPS, including seven in the Mojave National Preserve and two in Death Valley National Park. The following is a general description for the eighteen allotments in the Planning Area. Refer to Table 3-2 and Appendix P for resource related information.

### **Current Grazing Leases in the NEMO Planning Area**

**Clark Mountain #9003:** The BLM portion of Clark Mountain Allotment is 97,560 acres in size and constitutes 80% of the total allotment. The remaining acreage (20%) is within the Mojave National Preserve (MNP) and is administered by the National Park Service (NPS). The allotment can be grazed all year-long with 132 cattle, however about 25 cattle have been using the allotment for the past several years. The Allotment Management Plan (AMP) for Clark Mountain Allotment was completed in 1984. Rangeland health field assessments for this allotment were completed by April 1999. The allotment is within Category I desert tortoise habitat and portions of the Stateline Wilderness, the Mesquite Wilderness and Clark Mountain HMA.

**Crescent Peak #9013:** The BLM portion of Crescent Peak Allotment is 6,719 acres and comprises 23% of the allotment. The remaining acreage is within the MNP and is managed by NPS. The allotment can be grazed all year-long with 30 cattle, however no



grazing use has occurred for several years. The AMP for the Crescent Peak Allotment was completed in 1986. Rangeland health field assessments, for this allotment, were completed by April 1999. There is no tortoise habitat in the BLM portion of the allotment.

**Deep Springs #5062:** This allotment is 43,932 acres in size. There are 167 cattle grazing from December 1 through February 28, and 250 cattle grazing from March 1 through May 31. There is no AMP for this allotment. An interdisciplinary team of representatives from the BLM, Forest Service, Deep Springs College (the lessee), and various other interest groups are working on development of the AMP. Until plan completion, the team decides on livestock stocking levels, and rotation of livestock within BLM and Forest Service pastures.

**Eureka Valley #5001:** This 17,000-acre ephemeral allotment has received infrequent grazing for the last ten years. Grazing use is managed under ephemeral guidelines in the CDCA Plan. An interdisciplinary team determines turnout for this allotment.

**Fish Lake Valley #5090:** Grazing use occurs from September 1 to October 1 with 93 cattle. There is no AMP for this allotment. The BLM Tonopah, Nevada Field Office administers this allotment for the Ridgecrest Field Office.

**Horse Thief Springs #9007:** This allotment can be grazed year-long with 202 cattle. However, for the past several years grazing use has been a third to none of the permitted use. The AMP for the Horse Thief Springs Allotment was completed in 1985. Rangeland health field assessments for this allotment were completed by April 1999. The allotment is within Category III desert tortoise habitat and portions of the Kingston Range Wilderness, the North Mesquite Mountains Wilderness, the South Nopah Range Wilderness, the Pahrump Valley Wilderness, and the Nopah Range Wilderness.

**Hunter Mountain # 5013:** This allotment is located on BLM-managed land and in Death Valley National Park. The BLM portion is 53,920 acres and there are no AUMs allocated to the BLM portion. In the past, lack of water prevented grazing of the area now administered by BLM. Water can be hauled to approved locations, and future production studies will be conducted to establish carrying capacity for this allotment. The AMP for the Hunter Mountain Allotment was completed in 1989.

**Jean Lake #9017:** The allotment can be grazed with 25 cattle and this use is limited to the winter months by mitigation measures for critical desert tortoise habitat. However, grazing has not occurred for many years. There is no AMP for the Jean Lake Allotment. Rangeland health field assessments for this allotment were completed by April 1999.

**Kessler Springs #9008:** The Kessler Springs Allotment is 14,161 acres in size. The portion managed by NPS in the MNP was canceled on 29 August 2000. The allotment can be grazed year-long with 33 cattle. Grazing is based on forage condition and management needs for the allotment. The AMP for the Kessler Springs Allotment was completed in 1982. Rangeland health field assessments for this allotment were



completed by April 1999. The allotment contains critical desert tortoise habitat designated by the USFWS.

**Last Chance #5062:** With the passage of the CDPA a portion of this allotment is now located within Death Valley National Park. The BLM allotment is 35,532 acres and 1,639 AUMs. There is no AMP for this allotment. Allotment inspections and monitoring key forage plant species utilization levels are used to determine changes in livestock stocking levels.

**Oasis Ranch #5059:** This allotment is approximately 22,968 acres. The authorized use is 656 AUMs or 215 cattle for any three-month period between April 1 and September 30. There is no AMP for this allotment. This allotment is managed with a companion allotment in Nevada. A deferred grazing management system has been implemented.

**Pahrump Valley #8000:** This allotment is 26,952 acres. The authorized use is 353 AUMs, or a maximum of 175 head of cattle from February 15 to February 28, and 175 head of cattle from March 1 to April 15. There is no AMP for this allotment. Approximately 90% of the allotment is located within the Nopah Range Wilderness. The allotment is situated in desert tortoise habitat, but outside critical habitat. Allotment inspection and monitoring of key plant species utilization levels are used to determine any changes in livestock stocking rates.

**Piute Valley #9004:** The Piute Valley Allotment is 20,145 acres with 42% of the allotment managed by the BLM. The remaining acreage (58%) is within the MNP and administered by NPS. The authorized use for ephemeral grazing activities is 73 AUMs or 33 cattle per year. The AMP for the Piute Valley Allotment was completed in 1984. Rangeland health field assessments for this allotment were completed by April 1999. The allotment contains critical desert tortoise habitat designated by the USFWS.

**South Oasis #5063:** This allotment is 15,173 acres. The authorized use is 477 AUMs or 59 head of cattle from April 1 through August 31. There is an AMP for this allotment. A deferred grazing management system has been implemented.

**Valley View #9000:** The BLM Valley View allotment is 31,575 acres and covers 10% of the total allotment. The remaining 90% is within the MNP and managed by the NPS. The authorized use is 933 AUMs or 71 cattle per year for all year long. The AMP for the Valley View Allotment was completed in 1984. Rangeland health field assessments for this allotment were completed by April 1999. The allotment contains critical desert tortoise habitat designated by the USFWS at the lower elevations.

**Valley Wells #9009:** The BLM Valley Wells Allotment is 223,007 acres and covers 86% of the total allotment. The remaining 14% is within the MNP and is managed by the NPS. The permitted use is 3,994 or 317 AUM's cattle per year from the first of March through the end of February. The AMP for the Valley View Allotment was completed in 1984. Rangeland health field assessments for this allotment were completed by April 1999. The allotment contains critical desert tortoise habitat designated by the USFWS.



Portions of the Hollow Hills Wilderness, the Kingston Range Wilderness, the Mesquite Mountains Wilderness, North Mesquite Mountains Wilderness, and the Clark Mountain HMA occur in the allotment.

**White Wolf #5060:** This allotment is approximately 13,733 acres. The authorized use is 307 AUMs or 55 head of cattle from September 15 through February 28. There is no AMP for this allotment. Allotment inspection and monitoring key forage plant species utilization levels are used to determine any changes in livestock stocking levels.

**Range Improvements:** In order to facilitate effective and economical grazing use, structural facilities and other range improvements are installed on the allotments. Some of these improvements, such as corrals and providing supplements, are needed to facilitate the handling of livestock. Other developments are primarily used to enhance or impede cattle movement or improve the condition of forage by installation of wells, pipelines, troughs, prescribed fires, fences, springs developments, and reservoirs. Developed water sources are used for livestock and wildlife. Many of these facilities have been installed under cooperative ventures between the lessee and BLM. Most improvements are installed and maintained exclusively by the rancher on private lands and as permitted by BLM on public lands.

**Grazing Systems:** Grazing systems (strategies, plans, etc.) are designed cooperatively between the lessee and the BLM to meet both the needs of the grazing operation and to protect or enhance some non-livestock related rangeland resources (e.g., riparian areas, T&E species). Systems may prescribe scheduled livestock movement, specific area of use, percentages of forage consumption, and special mitigation measures (e.g., 200 lbs./acre of ephemeral forage before turnout). The grazing system may become a term and condition for grazing use and would be briefly described in the grazing lease. All grazing use must conform to the grazing lease.

On most allotments where riparian areas exist, the riparian areas, whether lentic or lotic, normally constitute a very small proportion of the allotment area and are often located in a fragmented pattern throughout each allotment. Although these areas constitute a very small amount of the overall forage available for livestock in each allotment, they are very attractive areas to livestock, because of their proximity to water, shade, and vegetation that remains succulent much longer than the adjacent upland vegetation. Consequently, livestock tend to congregate in these areas and can quickly overuse the riparian vegetation. The use of riparian-wetland areas by other ungulates, in conjunction with livestock, makes the problems all the more complex. Wild horses and burros, in particular, present a difficult management problem. These animals also find most riparian-wetland areas attractive and may overuse the vegetation even in the absence of livestock.

**Monitoring:** Monitoring is the orderly, repeated collection, analysis, and evaluation of resource data to ascertain progress in meeting resource management objectives (this is based on BLM Manual 6600). The repetition of measurements over time for the purpose



of detecting change distinguishes monitoring from inventory and assessment. Additional discussion of monitoring can be found in Appendix E.

Since the early 1980's grazing allotments have been assigned to one of four categories, based upon current resource conditions and the potential for improvement. This categorization has served as a method for the BLM to determine which allotments should have the most management attention. Each allotment is to be reviewed periodically to determine if the categorization is still appropriate for the particular allotment based on monitoring or other information. If not, the Authorized Officer will reassign the allotment to the appropriate category. Table 3-2 shows the number of allotments and their current category.

**Table 3-2: Allotment Resource Information**

Allotment Name	Forage Type <sup>2</sup>	Acres	AUMs	MIC <sup>3</sup>	Assessment Complete <sup>4</sup>	Standards	
						Fallback <sup>5</sup>	Alt 1
Clark Mountain	Per/Eph	97,560	1,303	M	Yes	2	2
Crescent Peak	Per/Eph	6,719	359	C	Yes	2	2
Deep Springs	Perennial	43,932	1,250	M	Yes	2 (3)	2 (3)
Eureka Valley <sup>2</sup>	Ephemeral	17,000	0	UC	No	2 (3)	2 (3)
Fish Lake Valley	Perennial	577	52	UC	No	2 (3)	2 (3)
Horsethief Springs	Per/Eph	150,140	2,424	M	No	2	2
Hunter Mountain	Perennial	53,920	0	I	Yes	2	2
Jean Lake	Per/Eph	9,806	300	C	Yes	2	2
Kessler Springs	Per/Eph	14,161	481	C	Yes	2	2
Last Chance	Perennial	35,532	1,639	I	Yes	1	1
Oasis Ranch	Perennial	22,968	656	I	Yes	2	2
Pahrump Valley	Per/Eph	26,952	353	M	No	2	2
Piute Valley	Ephemeral	20,145	0	M	Yes	2	2
South Oasis	Perennial	15,173	477	I	Yes	4	4
Valley View	Per/Eph	31,575	849	C	Yes	2	2
Valley Wells	Per/Eph	223,007	4,272	I	Yes	2	2
White Wolf	Perennial	13,733	307	M	No	2 (3)	2 (3)

2 Ephemeral and/or perennial are the two forage types that may be grazed on an allotment. Ephemeral forage primarily consists of ephemeral grasses and forbs. Perennial forage primarily consists of perennial grasses and shrubs.

3 There are four Selective Management Categories (M, I, C, UC) for grazing allotments. Category "M" allotments are in satisfactory resource condition and are producing near their potential under existing management strategies. There are little or no known resource use conflicts or controversies. Category "I" allotments generally have potential for increasing resource production or conditions, but are not producing at that potential. There could be conflicts or controversy involving resource conditions and uses, but there are realistic opportunities to enhance resource conditions. Category "C" allotments usually consist of relatively small acreage or parcels of public land. They are often, but not always, intermingled with larger amounts of non-federally owned lands. There are little or no known resource use conflicts or controversies. Usually opportunities for positive economic return from public investments are limited in these allotments.

4 This column indicates if a rangeland health assessment has been completed. Prior to determining achievement of standards, a field assessment of resource conditions is to be conducted by a team of field specialists.

5 The fallback column indicates the category based on results from the health assessment or an estimation of resource conditions if the assessment is not completed. Alternative I column estimates the category an allotment is expected to attain. The categories are; (1) areas where one or more standards are not being met, (2) areas where all standards are being met, (3) areas where the status of one or more standards is not known, and (4) areas where one or more standards are not being met, but factors other than cattle grazing is the primary contributor to the problem.



### **3.7 WILDERNESS**

The NEMO Planning Area encompasses all or portions of 24 areas of designated wilderness totaling 1,225,000 acres, eight wilderness study areas totaling 200,000 acres and approximately 475,000 acres of "released lands". Wilderness and wilderness study areas are Congressionally-designated; "released lands" are those lands, within BLM's former wilderness study area boundaries, that Congress did not designate as wilderness or wilderness study area. The Planning Area has the highest concentration of designated wilderness of any region in the contiguous U.S.

BLM manages designated wilderness and wilderness study areas within the NEMO Planning Area consistent with the California Desert Protection Act (CDPA) of 1994, the administrative instruments (regulations, policies, etc.) from that statute, and other applicable Federal statutes. These instruments identified management direction for these lands with respect to specific uses that may occur within wilderness, as well as overall goals for lands designated. Of particular importance is the clear Congressional intent that wilderness designation not lead to the creation of "buffer zones" around wilderness boundaries. In and of themselves, non-wilderness activities visible or audible from wilderness are not to be precluded up to such boundaries.

Until released lands become classified again, BLM manages them consistent with the CDCA Plan and Amendment #53 of the 1982 Amendments to the CDCA. The CDCA Plan provides that such lands be returned to their original MUC designation unless they were recommended as wilderness by the BLM. Amendment #53 provides that recommended lands that were released from wilderness consideration be managed under Class "L" guidelines while they await formal classification. Classification decisions will be a determination made by BLM's District Manager, California Desert District, and must be pursued through plan amendment.

### **3.8 RECREATION RESOURCES AND ACTIVITIES**

With expanded leisure time and growing affluence among the general population, the California Desert attracts millions of visitors annually. The desert provides the resources necessary for a variety of recreational experiences. These resources provide natural beauty, solitude, and freedom from the structure and regulations of urban areas. In all recreational opportunities, scenic values are often cited as an important resource to the participants' recreation experience. Virtually all recreation activities are dependent upon availability of access within the Planning Area. Most visitors travel on some previously used or marked motorized vehicle route. Recreation opportunities are grouped along a continuum of opportunities ranging from intensive vehicle-oriented activities at one end to resource-oriented activities at the other although there is often overlap between the two.

In most cases, public recreation use of BLM-administered lands is unsupervised and unorganized. BLM management of recreation activities, facilities and visitor contacts center around OHV organized events, open areas, permitted commercial and organized



activities (bighorn sheep hunts, trail rides, vision quests), and specific local wildlife conservation sites.

### **3.8.1 ORGANIZED COMPETITIVE VEHICLE EVENTS**

BLM's Multiple-Use Classification (MUC) guidelines allow for competitive events in varying degrees on public lands within the Planning Area. The CDCA Plan as amended in 1982 designated one long-distance, point-to-point, competitive event Race Course in the Planning Area - the "Barstow-to-Vegas (B-to-V) Motorcycle Race." The B-to-V Race Course (Chapter 7, Figure 14) is roughly parallel to and north of I-15, utilizing a portion of the Boulder Utility Corridor for some of its length, and crosses critical tortoise habitat in northern Shadow Valley and northern Ivanpah Valley. This race course was designed to be offered for a specific kind of competitive event and not for access or casual use unless all or portions of them were "approved" in the routes of travel designation process. While the Barstow-to-Vegas Race Course is still in the CDCA Plan, it has not been used for a competitive event since 1989 due to the listing of the desert tortoise and issues of competitor and spectator compliance.

### **3.8.2 DUMONT DUNES OPEN AREA**

The Dumont Dunes Recreation Area is located off Highway 127 north of Baker. The recreation area is surrounded by the Kingston Range Wilderness Area to the northeast, Death Valley National Park to the west, and the Salt Creek ACEC to the south. The main Dumont Dunes system, though relatively small, exhibits more types of dunes than any other dune system in the California Desert. This makes for excellent OHV recreational opportunities. Since the 1960s, Dumont Dunes has attracted people to the challenge of dune riding. The recreation area attracts over 60,000 visitors annually. Most visitors are from southern Nevada and the Los Angeles Basin.

Peak use periods in OHV open areas center around holiday weekends and the "spring break" at colleges. The net effect is a general use period from September through May of each year with the greatest use occurring in September-November and March-April. Use levels are lowest during the summer months, with the exception of holiday weekends. BLM active management presence is generally limited to peak use periods.

In the past, only one permitted event has been held at Dumont Dunes each year. The Las Vegas Jeep Club usually holds an annual event over the Presidents Day holiday weekend and operates within an area of the main dune system so as not to conflict with unrelated free-play activities. Recently, more commercial activities have been occurring at the dunes. This is most likely due to the increase in population in the Las Vegas area and proximity of the dunes to Nevada. These events include the Suzuki Quadzillathon, an ATV hill climb drag race, and the Dune Riders Sandboarding Competition. This latter event has been held at the dunes for the past three years.



### 3.8.3 DUAL-SPORTS EVENTS

Each year, the BLM receives requests for organized touring events. In response to this recreational demand, the BLM has consulted with the USFWS on an organized motorcycle/OHV touring program, or dual-sports events in desert tortoise habitat. To fall under the criteria of the relevant biological opinion (1-6-92-F-2; October 25, 1991) the event must be non-competitive in nature, occur between November 1 and March 1, occur entirely on existing open routes, and have no more than 500 participants. See Appendix A: Desert Tortoise Conservation Strategy (*Desert Tortoise Mitigation Measures*) for a list of standard mitigation measures for activities in desert tortoise habitat.

The Dual Sport Committee of District 37 of the American Motorcyclist Association applies on a regular basis for a recreation permit for use of existing routes of travel through lands managed by the BLM as part of their Dual Sport National Trail Ride. The LA-B-to-V Dual Sport Trail Ride has been a permitted event since 1984 and is limited to no more than 500 participants. The event involves motorcycle touring through the NEMO Planning Area.

### 3.8.4 VEHICLE TOURING

Casual-use vehicle touring is one of the most popular forms of recreation in the NEMO Planning Area. It is to some degree inseparable from the subject of destination recreation and, to a certain extent, from the subject of access where roads are common. Small informal group events occur on a regular basis throughout the Planning Area. Their use levels are currently unknown. They are generally related to rock and mineral collection, bird watching, equestrian use, OHV touring, wind-driven vehicle use, camping, and hiking.

### 3.8.5 HISTORICAL TRAIL TOURING

The off-road vehicle experience of traveling historical routes (Table 3-5) provides an educational and scenic experience of the natural wonders of a harsh desert region and the elements that the pioneers and founders of the historical route had to endure. The annual NORCO Trail Ride, an equestrian event, follows the historic Mojave Road. Other vehicular and equestrian use occurs, throughout the use season, on the historic Mojave Road, which passes through the Piute Valley in an east-west direction. Current visitor use levels are unknown. Indications from the condition of the road surface and infrequent observations by staff in the field is that there are about 2,000 visits per year to this segment of the Mojave Road. The East Mojave Heritage Trail was created as an extension of the Mojave Road Project for people who enjoy the backcountry and were looking for an educational experience. The trail is a 650 mile closed loop that makes use of existing roads and trails. With the passage of the California Desert Protection Act in 1994, much of the trail has been closed and only fragments remain.

Much of the Old Spanish Trail (Mormon Road) has been paved within the NEMO Planning Area. Tracks of the trail can still be seen at Emigrant Pass just off the Old



Spanish Trail Highway as well as at Impassable Pass at the Alvord Mountains and points west. The route leading west from the highway is closed to motorized vehicle use to preserve what remains of the Old Spanish Trail. Variations of this route were traveled from 1829 to 1848, all being called the Spanish Trail, making it difficult to trace the "original" route. Most of the route in California is also known as the Mormon Road and became a commercial trade route between Los Angeles and Salt Lake City.

A portion of Route 66, "Old National Trails Highway," forms the southern boundary of the NEMO Planning Area. Route 66 was designated in 1926 and was the Main Street of America. It was the first national highway to connect Chicago with Los Angeles and was known as the "Mother Road." By 1985 however, the federal government deleted Route 66 from the Federal Highway System. Today, much of the route in the Mojave Desert has been replaced by Interstate 40. Route 66 still offers travelers an interesting touring opportunity. The recent revival of Route 66 and the fact that more than 80% of the original route is still open has lead to a substantial increase in travelers. In June of 1996, an estimated 3,000 Harley-Davidson bikers from around the world rode the road from Milwaukee to Ontario, making it the biggest event ever held on Route 66.

From 1905 to 1940, the Tonopah & Tidewater Railroad ran from Ludlow to Goldfield, Nevada. The line was very important for the mines, mining companies, residents and employees even though it never financially flourished. The T&T railroad line was the fastest, shortest, and cheapest route to Los Angeles and San Francisco for all the towns and mines along the Amargosa River and Death Valley regions. In order to preserve what remains of the original route, the remnant berm north from Sperry to its junction with the California/Nevada border has been closed to motorized vehicle use. However, there are adjacent roads along the berm providing vehicular access. The berm is open to motorized vehicles from Sperry south to Riggs.

**Table 3-3: Major Historical Trails in the NEMO Planning Area**

Name	Miles	Miles On Public Land*	Resource Values
The Mojave Road	130	11 miles. California border to east boundary of Mojave National Preserve (Fort Piute)	Scenic, historical, Native American values
East Mojave Heritage Trail	650	38 miles open from Rocky Ridge to Fernner. 61 miles from Needles to Ivanpah. 97 miles from Ivanpah to Rocky Ridge.	Scenic, historical, Native American values.
Old Spanish Trail/ Mormon Road	1200	50 miles. California border to Ft. Irwin Military boundary	Scenic, historical, Native American values
Route 66	2400	68 miles. Section between Ludlow and Kelbaker Road, and between Fenner and east NEMO boundary	Scenic, historical
Tonapah & Tidewater Railroad	160	75 miles. 20 miles open from Riggs to Sperry	Scenic, historical

\*Miles on Public Land represent miles in the NEMO Planning Area only.

### 3.8.6 NATURE STUDY

Season of use for non-regulated activities (no legal limitation on season or permit required) is dependent upon the environmental conditions that either are being sought (wind-driven vehicle use, photography of wildflowers) or which limit the ability to enjoy or engage in the activity (equestrian use, hiking, OHV touring). There is a close correlation between environmental quality and the quality of the recreation experience.



Many activities, such as sightseeing, bird/wildlife viewing, photography, and hiking, depend on an unspoiled natural setting for a rewarding experience. Wilderness areas and ACECs provide good opportunities to study rare or endangered plant and wildlife species, geological and archeological features and desert ecology.

Table 3-6 shows BLM ACECs providing opportunity for nature study. These ACECs provide only a small portion of available resource-oriented recreation on public lands. Wilderness Areas also provide good opportunities for nature study.

Although all ACECs within the NEMO Planning Area are of importance, the Amargosa Canyon/Grimshaw Lake Natural Area ACEC is of significant value. Portions of the Amargosa River have been determined eligible for and are currently a potential candidate to the National Wild and Scenic Rivers System (See Appendix O), and both areas are currently designated as national Watchable Wildlife Sites. Both ACECs are listed on numerous maps as well as in several guidebooks and are near a "snowbird" winter use camping area located at Tecopa Hot Springs.

**Table 3-4: Areas of Critical Environmental Concern (ACEC).**

Name/Field Office	Acres*	Resource Values
Amargosa River/ Grimshaw- Barstow	9,206 1,096	Wildlife habitat, vegetation, outstanding scenery, riparian
Bigelow Cholla RNA - Needles	83	Botanical values
Cerro Gordo - Ridgecrest	9,073	Prehistoric and historic values, vegetation
Clark Mountain - Needles	4,234	Prehistoric and Historic values, outstanding scenery, wildlife habitat
Dead Mountains - Needles	28,559	Native American values
Denning Spring - Barstow	465	Prehistoric and historic values
Greenwater Canyon - Barstow	798	Prehistoric and Native American values
Halloran Wash - Needles	1,743	Prehistoric values
Kingston Range - Barstow/ Needles	19,620	Wildlife habitat
Mesquite Hills/Crucero - Barstow	5,002	Prehistoric values
Mesquite Lake - Needles	6,731	Prehistoric values
Mt. Pass Dinosaur Trackway - Needles	628	Historic and paleontological values
Saline Valley - Ridgecrest	1,389	Wildlife habitat
Salt Creek (Dumont) Barstow	2,205	Wildlife habitat, prehistoric values
Surprise Canyon - Ridgecrest	4,639	Prehistoric and historic values, outstanding scenery, wildlife habitat, vegetation
White Mountain City - Ridgecrest	32	Cultural and historical values

\*Acres computed using Geographic Information System and include all public lands and private inholdings.

Petroglyphs, archeological sites, and many old mining towns still remain fairly pristine. Along major highways and backcountry roads, adits and mining shafts of the early prospectors' dot the mountain sides. Most trails (Table 3-7) that lead to historical places are grown over with vegetation, washed-out, or no longer open for vehicular travel in order to protect the resources. These remnant trails and canyon washes provide the opportunity for hikers to explore on foot.



**Table 3-5: Historic Hiking Trails**

Name/Field Office	Miles	Resource Values
Burgess Mine Trail - Ridgecrest	7.0	Historic mining district. Frenchy's cabin
Lonesome Miner Trail - Ridgecrest	40.0	Heart of historic trail system. Frenchy's cabin, millsite
Snowflake Mine Trail - Ridgecrest	7.0	Best known and most used trails in the Inyo Mountains. Historical features.
Amargosa Natural Area Trail- Barstow	7.0	Old Spanish Trail, T&T Railroad, historic mining workings and buildings

### 3.8.7 CAMPING

Traditionally, most camping in the CDCA has been in established campground areas, but in the NEMO Planning Area camping mainly has been in the open desert where facilities are not available. Camping is generally associated with other recreation such as vehicle touring, nature study, rockhounding, and hunting.

### 3.8.8 LAKEBED ACTIVITIES

Dry lakebeds have often been ideal areas for a variety of recreational activities. They provide the basic requirements (open space, smooth surface) for land sailing, model rocket and airplane flying, hang gliding, and stargazing (particularly during celestial events such as the passing of comets).

Ivanpah Dry Lake is located on Interstate 15 at the California/Nevada border. Its close proximity to nearby hotels and restaurants/casinos makes this a favorite place for wind-power recreationists. Recreationists throughout the world travel to Ivanpah Dry Lake's expansive open spaces to play. International championship racing, long-distance archery, kite buggying, and land sailing are just some of the activities this dry lake is used for. The current world speed record for land sailing was set on the Ivanpah Dry Lakebed. The lakebed is closed to motorized vehicles without a permit.

Because of the increased amount of activity associated with the lakebed, the BLM identified Ivanpah as an area appropriate for volunteer efforts for development, improvement, or maintenance. The Friends of Ivanpah was recently established as a non-profit organization to help maintain the recreational and natural resources of the area.

The management objectives for each dry lake dictates the area's use and special monitoring requirements are needed to protect their resource values. The following table represents the significant dry lakebeds in the NEMO Planning Area and their recreational availability.

**Table 3-6: Dry Lakes**

Dry Lakes	Access
Broadwell Dry Lake	Open
Ivanpah Lake Dry	Open to non-motorized vehicle access only
Mesquite Dry Lake	Closed except for approved routes
Salt Dry Lake	Closed except for approved routes
Silurian Dry Lake	Open
Silver Dry Lake	Closed, except for approved routes or by permit



### 3.8.9 ROCKHOUNDING

The California Desert is heavily used by rockhounds from southern California and Nevada. Much of the collecting occurs on BLM lands, with the remainder occurring largely on privately owned land, where it is subject to landowner permission. Collecting is prohibited in the National Parks and on most State Park lands, and on “developed recreation sites and areas,” or where otherwise prohibited or posted.

**Table 3-7: Rockhounding Sites**

Area/Field Office	Site	Materials	Location
EUREKA VALLEY Ridgecrest	Deep Springs Crystal Area (“Crystal Hill”) Sulphur Mine Eureka Valley	Smoky Quartz Crystals Variscite Obsidian	T7S, R36E, Sec. 9 (MDM)
DARWIN Ridgecrest	Cerro Gordo Mines Lee Mines	Numerous Minerals. Lazulite	T16S, R38E, Sec. 13 (MDM) T17S, R40E, Sec. 23 (MDM)
PANAMINT Ridgecrest	Surprise Canyon Panamint City Onyx Mine Ballarat	Lepidolite Idocrase, Diopside, Epidote, Wulfenite “Death Valley Onyx” (Travertine) “Ballarat Marble” (Onyx)	T21S, R45E (MDM) T21S, R45E, Sec. 11 (MDM) T22S, R43E, Sec. 6 (MDM)
BITTER-WATER Ridgecrest	Ryan Eagle Peak (Eagle Mountain) Old Ryan (Lila C. Mine) Zabriski Tecopa Pass Eclipse Mine Crystal Spring Mine	Colemanite Agate  Jasper Fire Opal Petrified Wood Silver Quartz	T25N, R3E, Sec. 8 (SBM) T24N, R5E, Sec. 24 (SBM)  T24N, R4E, Sec. 12 (SBM) T21N, R7E, Sec. 18 (SBM)  T20N, R6E, Sec. 18 (SBM) T20N, R9E, Sec. 25 (SBM)
OWLSHEAD/AMARGOSA Barstow	Sperry Wash	Palm Fiber, Palm Root and Limb Sections, Wood	
KINGSTON Barstow/Needles	Kingston Range (Horse Thief Springs) Shadow Mountain Toltec Mines (Turquoise Mountain) Mohawk Mine Halloran Spring	Amethyst  Azurite  Turquoise  Cerussite, Galena, Sphalerite, Smithsonite Azurite	T19N, R10E, Sec. 3 (SBM)  T17N, R11E, Sec. 5 (SBM)  T16N, R10E (SBM)  T15N, R10E, Sec. 14 (SBM)
MOJAVE Barstow	Ash Hill Black Ridge  Bagdad Obsidianite Field	Flower Agate, Jasper, Chalcedony, Sard Chalcedony Roses, Jasper, Onyx, Perlite, Chrysocolla Obsidianite	T7N, R9E (SBM)   T6N, R11E, Sec. 9 (SBM)

Few, if any, direct conflicts between rockhounding and other land uses appear to exist. Most rockhounds prefer areas that are accessible by vehicle on the existing network of roads and trails. Table 3-7 lists the areas where minerals and rocks have historically been collected in the Planning Area. It does not include wilderness areas that are no longer available by vehicle.

### 3.8.10 SHOOTING AND HUNTING

The public lands administered by the BLM in the California Desert have always been important to shooting and hunting, and recreational shooting or “plinking” continues to be a popular activity in the desert. The wide-open and seldom visited areas provide an appropriate place for this activity. Residents from Southern California and Las Vegas



urban areas often visit the NEMO Planning Area for target shooting, and visitors often bring firearms with them to partake in this activity.

The shooting or discharge of firearms is generally permitted on public lands except in specified areas (e.g., OHV Open areas), including wilderness in the NEMO Planning Area, as long as State and local laws permit such activity. These activities are regulated in order to minimize conflicts and resource impacts.

The California Department of Fish and Game regulates all hunting in the desert. Hunting peaks during the upland gamebird season but occurs at a much lower level at other times. During hunting season, there is an increase in use of motorized vehicles throughout the Planning Area.

### **3.9 VEHICLE ACCESS**

One of the primary issues behind preparation of the CDCA Plan was access to and use of the resources of the California Desert. Access to desert resources by the public occurs for many reasons such as economic, recreation, or transportation purposes. Some access involves the use of major roads, maintained gravel and dirt roads, unmaintained dirt roads, trails and accessible desert washes.

Primary east-west access is provided by portions of National Trails Highway (Route 66) and I-40 on the southern boundary of the planning area, and I-15 through the southern third of the planning area. The major east-west access through the central portion of the planning area provides visitors access to Death Valley National Park. It consists of SH 178 which connects the stateline, west through the Tecopa/Shoshone area with SH 190; and SH 190 itself, which runs west from SH 127 through Death Valley Junction and the Furnace Creek area within Death Valley National Park, to Lone Pine just west of the planning area on US 395. Primary north-south access is provided by: (1) US 95 which provides access to the southeastern portion of the planning area, (2) SR 127, which spans the central third of the planning area from Baker on I-15 northward to the stateline north of Death Valley Junction, and (3) SR 168 which provides access to the northernmost reaches of the planning area.

The desert topography and geomorphic features present in the northern part of the NEMO Planning Area limits, and sometimes prevents cross-country access. In a few places occasional rains and flash floods make travel on vehicle access routes impassable. Physical limitation (slope aspects, etc.) often provides little flexibility of alternative access to desert resources. Access may involve a single road into an area, while other areas provide several options for the management of a route network.

The desert topography and geomorphic features present in the southern part of the NEMO Planning Area are relatively different, represented by broader valleys and more gently sloping mountains. This type of desert terrain provides increased opportunities for motorized vehicle access. This results in additional management pressures when attempting to strike an appropriate land management balance between access to and use of the resources of the California Desert.



In addition, much of the southern portion of the Planning Area is designated critical habitat for desert tortoise. Land management planning, goals, objectives and implementation actions must be consistent with the recovery goals developed for the desert tortoise.

### 3.10 MINERALS AND MINING

The Southern California region, including portions of the Mojave Desert, is one of the most highly mineralized areas in the United States. This is due to the variety of geologic terrain exposed in the many mountain ranges and the depositional environments of the intervening basins. A detailed discussion of the geology and mineral resources of the area is contained in Appendix G of the CDCA Plan. The NEMO Planning Area is situated along the northeastern margin of this mineralized region and contains many known mineral deposits and potential for the discovery of additional mineral resources as shown on Figure 3a (Chapter 7). Passage of the CDPA has withdrawn many of the deposits and mineral potential areas from mineral entry and development in designated wilderness areas, except for valid existing rights. Mineral development is encouraged on public lands outside of specially designated areas and managed under several laws by three categories: locateable, leaseable, and salable. Current management practices are described in Appendix K.

Mineral commodities mined currently or in the recent past include: gold, silver, barite, boron, hectorite, bentonite, gypsum, tungsten, talc, zeolites, sodium, limestone, sand and gravel, stone, turquoise, and rare earth elements (e.g., cerium, praseodymium, europium, and yttrium). Gold production occurs at two major mines located in the northern portion of the Planning Area at the Briggs Mine in the Panamint Range and the Castle Mountain Mine in the Castle Mountains. Gold prospecting occurs throughout the Planning Area. Inactive small mines and prospects are scattered throughout the Planning Area. (Chapter 7, Figure 3b)

Hectorite and bentonite are produced at the southern Clay Mine north of Death Valley Junction within the western half of the Upper Amargosa portion of the proposed Central Amargosa ACEC. This is one of three hectorite mines in the United States. The world's largest hectorite mine occurs south of the Cady Mountains in the West Mojave Desert Planning Area. The Upper Amargosa portion of the proposed ACEC also contains the access road to the Sidehill Mine.

Rare earth elements are produced at the Mountain Pass Mine, which is not within any proposed DWMA. This is one of two significant rare earth mines in the world. Potential reserves of rare earths are mapped in an area outside the boundaries of the current mine and a small portion of these reserves overlap the proposed Shadow Valley ACEC. These reserves may be developed over the next 25 years. A small expansion of the mine is currently under environmental review.

Talc is mined from several mines located in the Inyo Mountains and Kingston Range. Limestone is quarried in the Argus Range. Diatomaceous earth used as a moisture



absorbent is mined from a small operation located in Piute Valley. Active gypsum mining is occurring on Mesquite Lake and the surrounding area. Many small-scale intermittent mines exist throughout the Planning Area for various mineral commodities.

Sand and gravel and other aggregates are produced within the Planning Area. Although they occur throughout the Planning Area in alluvial fans and other sedimentary deposits, commercial deposits are limited by transportation costs and, therefore, usually located near market areas. These commodities are used primarily for ongoing major highway construction and repair and as aggregate for concrete in urban areas.

Access and water resources are important aspects associated with mineral development and will be an important consideration for future development.

Minor geothermal resources exist at such locations as Tecopa and Ivanpah Valley. However, further development of geothermal resources is not anticipated within the Planning Area. Although oil and gas potential has been identified in some areas of the Planning Area, further exploration is not foreseen.

### **3.11 LAND TENURE**

Lands are acquired, disposed of, or exchanged in accordance with FLPMA and other applicable Federal laws and regulations, to assure more efficient management of the public lands and reduce conflicts with other public and private landowners and facilitate consistency and logic in desert wide land-use patterns. The existing and proposed land tenure strategy for the NEMO Planning Area is discussed in more detail in Appendix N.

### **3.12 REGIONAL ECONOMY**

The largest portion of the Planning Area is within the eastern half of San Bernardino County with a smaller portion in eastern and southeastern Inyo County. In general the area is sparsely populated. In the northern part of the Planning Area is Shoshone with a population of 79 where general public services and emergency services are available. The community of Baker is located in the westerly portion of the Planning Area along Interstate 15 and has a population of 550. It services travelers along Interstate 15, particularly those traveling to Las Vegas. In the southeastern part of the Planning Area is the City of Needles with a population of 5,750 located near Interstate 40 on the banks of the Colorado River.

In the NEMO Planning Area, travel, dining and recreation services contribute a significant portion of the economic activity of the area, and the service industry drives the region's economics (Dean Runyan and Associates 1998). The designation of Death Valley National Park and the new Mojave National Preserve will likely serve to increase the number of visitors and thereby further increase the service sector. Cattle grazing and mining also contribute to the local area economy.



### **3.13 AMENDMENT SPECIFIC AFFECTED ENVIRONMENT**

Alternative proposals presented in Chapter 2 of this document were screened and evaluated with regard to the 13 critical elements (Council of Environmental Quality, 1980, as amended) and other major land-use planning elements of the human environment.

Elements that are present and potentially affected are described in further detail in this chapter. Elements present but not affected are addressed only briefly herein, and elements not present and not affected will not be addressed further in this document. Elements of the human environment that were identified as likely to be affected by one or more of the alternatives are Vegetation, Wildlife, Soil, Water and Air quality, Wild & Scenic rivers, Wilderness, Cultural resources and Native American values, Wild horses and Burros, Cattle grazing, Recreation resources, Minerals and mining, Vehicle access, Other land uses and Socioeconomic values. Critical elements that are present, but not substantially affected by any of the alternatives, include hazardous and solid wastes, floodplains and environmental justice. Critical elements, which are not present and therefore not affected, include prime and unique farmlands. Table 3.8, which follows, identifies, by amendment, critical elements and other resources, which are potentially affected. Taken in conjunction with the Summary of Impacts Tables at the end of Chapter 2, this table provides an overview of the potential affects of alternatives.



Table 3-8: Affected Resources in the NEMO Planning Area

Resource	S&G			DT-DWMAs			DT-Grazing			DT-Burros			Vole			T&E Plants			Bats		
	Present		Affected	Present		Affected	Present		Affected	Present		Affected	Present		Affected	Present		Affected	Present		Affected
	Y	N	Y	Y	N	Y	Y	N	Y	Y	N	Y	Y	N	Y	Y	N	Y	Y	N	
Vegetation	•		•	•			•			•			•			•			•		
T&E , Special Status*	•		•		•			•			•			•							
Invasive/Noxious Weeds*	•		•	•			•			•				•					•		
Wetlands & Riparian*	•		•					•			•				•						
Existing ACECs*	•		•		•			•						•					•		
Wildlife	•		•	•			•				•				•				•		
T & E , Special Status*	•		•	•			•				•				•				•		
Existing ACECs*	•		•		•			•							•				•		
Soil-Water-Air	•		•	•			•				•				•				•		
Water Quality*	•		•	•			•				•				•				•		
Water Quantity	•		•	•			•				•				•				•		
Wild & Scenic Rivers*	•		•		•			•			•				•				•		
Wilderness* and Visual	•		•	•			•				•				•				•		
Cultural* -Native American*	•		•	•			•				•				•				•		
Existing ACECs*	•		•		•			•							•				•		
Wild Horse & Burro	•		•	•			•				•				•				•		
Cattle Grazing	•		•	•			•				•				•				•		
Recreation	•		•	•			•				•				•				•		
Minerals and Mining	•		•	•			•				•				•				•		
Vehicle Access	•		•	•			•				•				•				•		
Land Uses/ Utilities	•		•		•			•							•				•		
Socioeconomic	•		•	•			•				•				•				•		

\* Critical Elements of the Human Environment.



**Table 3-8: Affected Resources in the NEMO Planning Area**

Resource	Released Lands				Greenwater				SpeedEvents				Routes of Travel				Tecopa Landfill				Shoshone LF			
	Present		Affected		Present		Affected		Present		Affected		Present		Affected		Present		Affected		Present		Affected	
	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Vegetation	•		•				•		•				•				•				•			
T&E , Special Status*	•		•				•		•				•								•			
Invasive/Noxious Weeds*	•		•				•		•				•				•				•			
Wetlands & Riparian*	•		•				•		•				•								•			
Existing ACECs*		•		•				•				•									•			
Wildlife	•		•				•		•				•				•					•		
T & E , Special Status*	•		•				•		•				•								•			
Existing ACECs*		•		•				•				•					•				•			
Soil-Water-Air	•		•				•		•				•				•				•			
Water Quality*	•		•				•		•				•				•				•			
Water Quantity	•		•				•		•				•				•				•			
Wild & Scenic Rivers*		•		•				•				•									•			
Wilderness* and Visual		•		•				•				•									•			
Cultural* -Native American*	•		•				•		•				•				•				•			
Existing ACECs*		•		•				•				•									•			
Wild Horse & Burro	•			•				•				•									•			
Cattle Grazing	•			•				•				•									•			
Recreation	•		•				•		•				•								•			
Minerals and Mining	•		•				•		•				•								•			
Vehicle Access	•		•				•		•				•								•			
Land Uses/ Utilities	•			•			•		•				•								•			
Socioeconomic		•		•				•				•					•				•			

\* Critical Elements of the Human Environment.



### **3.13.1 STANDARDS AND GUIDELINES**

The fundamentals of rangeland health standards and guidelines address ecological components that are affected by all uses of the public rangelands. Currently grazing is the only use with associated resource management activities, that is required to have standards of rangeland health assessed. As part of overall resource management strategies for grazing activities, short-term and long-term implementation strategies must be developed in areas that have been determined not to be meeting rangeland health standards during the assessment process, if grazing is determined to be a contributing factor to the rangeland health conditions. These strategies are designed to improve rangeland health conditions and move rangelands towards meeting identified rangeland standards and guidelines.

The grazing regulations established a set of fallback standards and guidelines that are to be used until the State Director develops a set of regional standards and guidelines. Currently, grazing activities within the Planning Area utilize the fallback standards and guidelines, and assessments for most allotments in the planning area were completed in the 1999 grazing season. The results of these assessments are summarized in Table 3.2. Results of assessments and range condition in specific allotments is described in more detail in the next section, Section 3.13.2, for areas within desert tortoise DWMA's.

### **3.13.2 DESERT TORTOISE MANAGEMENT AREA BOUNDARY, CATTLE GRAZING AND BURRO MANAGEMENT PROPOSALS:**

#### **3.13.2.1 Piute-Fenner Valley**

The Piute-Fenner Valley area is approximately 173,850 acres of land bounded by I-40 on the south, the California-Nevada border on the northeast, the Dead Mountains on the east and southeast, and the Mojave National Preserve on the north and west. Approximately 3,960 acres are within Multiple-use class (MUC) "Moderate", 13,700 acres are within MUC "Controlled", with the remainder within MUC "Limited", according to the CDCA Plan, as amended. Multiple-use class applies to the Federal lands within these areas under BLM jurisdiction only. In addition, 34 acres have been segregated from the public land laws<sup>6</sup>.

**Vegetation & Related Natural Values:** Natural vegetation communities are primarily Creosote bush series and Creosote bush - white bursage series. Less common communities include Big galleta grass series, Indian rice grass series, and Shadscale

---

6. Notice R-236 published in the Federal Register on November 19, 1966



series. The valley is dissected by washes of various sizes. The larger washes, such as Piute Wash, Woods Wash, and Watson Wash, drain the area from north to south. No special status plants occur in this area.

**Wildlife Values:** Wildlife species include a variety of animals typical of creosote bush flats and washes in the Mojave Desert. Common species include the following:

**Mammals:** desert shrew, California myotis, western pipistrelle, big brown bat, desert cottontail, black-tailed hare, little pocket mouse, desert kangaroo rat, Merriam's kangaroo rat, deer mouse, kit fox, coyote, badger;

**Birds:** red-tailed hawk, golden eagle, prairie falcon, Gambel's quail, mourning dove, poor-will, Bendire's thrasher, Cactus wren, verdin, black-throated sparrow, Brewer's sparrow;

**Reptiles:** desert iguana, zebra-tailed lizard, long-nosed leopard lizard, side-blotched lizard, desert horned lizard, western whiptail, glossy snake, gopher snake, western shovel-nosed snake, sidewinder, Mojave rattlesnake.

### Special status species

**Desert Tortoise:** This area is considered the most critical geographical unit of desert tortoise habitat on public lands in the East Mojave. The valleys contain good to excellent quality desert tortoise habitat. It provides the central connection in the largest contiguous habitat unit of the East Mojave population, which stretches from the southeastern portion of the Mojave National Preserve through Fenner Valley and Piute Valley into Nevada. An ACEC has been established in Nevada from the State line to the northern extent of the range of the East Mojave recovery unit (See Volume II, Map 2-7 of the Proposed Las Vegas Resource Management Plan and Final Environmental Impact Statement, Las Vegas Field Office, May, 1998).

**Wilderness Values:** The eastern boundary of the Piute-Fenner Valley area bisects the Dead Mountains Wilderness. The western approximately 13,700 acres of the total of 47,100 acres of the wilderness are within the Piute-Fenner Valley. This corresponds to the wilderness acreage that is Category I and critical desert tortoise habitat. The Dead Mountains Wilderness and its values are described in detail in the BLM Wilderness Booklet - Oct 94, available for review at all Bureau field offices within the California Desert District.

**Cultural and Native American Values:** The proposed Piute-Fenner Desert Wildlife Management Area was designated class "C" and "L" to protect significant cultural resources and Native American values within the DWMA. Federally recognized affected Native American tribes have identified religious and secular areas of importance within the physical boundaries of the DWMA. Prehistoric cultural resources present within the area include permanent and temporary habitation sites, rockshelters, milling stations, lithic manufacture sites, trails, rock alignments, and rock art sites. Historic resources



within the area include historic mining activity, portions of the Mojave Road, U.S. Route 66, the AT&SF railroad, and the Von Schmidt boundary. The Fort Piute National Historic District and an associated petroglyph area are immediately east of the DWMA within the Mojave National Preserve.

**Wild Horse and Burro Values:** The Piute-Fenner Valley DWMA overlaps approximately 26,100 acres (15%) of the Dead Mountain Herd Area, which has a "no retain burros" designation in the CDCA Plan and a management level of 0 burros. It is addressed in the Colorado River HMA Plan. This herd area is now almost entirely within designated wilderness. The most recent census for the Dead Mountains Herd Area is approximately 24 burros. Consistent with the CDCA Plan, burro removals shall continue to move the population numbers closer to 0 burros.

**Cattle Grazing (and Allotments):** Some of the public lands in this area are part of public rangelands with permitted cattle grazing authorized, generally at moderate levels. Piute Valley is an ephemeral allotment with no designated AUM permitted to graze at any particular time. Level of grazing is based on seasonal weather and forage conditions, if a permittee requests use. This allotment has been very infrequently used in recent years.

**Linear Utility Corridors:** Portions of two major utility corridors transverse the Piute-Fenner Valley area: Corridors R and E. Corridor R is an east-west corridor, which follows and includes lands adjacent to I-40, the southern boundary of Piute-Fenner. This corridor is a contingency corridor and contains a telephone line.

Corridor E is a three-mile-wide north-south corridor that sits at the boundary between the Mojave National Preserve and the western boundary of the Piute-Fenner area, and includes lands in the westernmost portion of the valley. Major utilities located in this corridor include two 230KV alternating current transmission lines and one telephone line.

**Recreation Activities and Vehicle Access:** To a great degree, desert recreation requires the use of a vehicle either as an integral part of the activity or as a means of accessing a remote destination point. BLM-administered lands in the area are generally available for public recreation. Primary uses include low-level, widely dispersed motorized recreational activities, and the area is primarily a touring through-area rather than a destination area for the general public, as it provides a gateway from the east to the Mojave National Preserve. Other recreational uses in the area include hunting, recreational shooting, and rock hounding. Equestrian trail rides and cattle drives have been authorized in the Planning Area. These activities may focus around a theme, such as the historic Mojave Road, or they may be more athletic in nature.

**Mineral Potential and Historic and Current Mining:** Within the Piute-Fenner Valley DWMA area, there are nearly 2,700 acres having high potential for an open pit heap leach operation. Any such operation would be subject to overall limitations under a proposed programmatic biological opinion for new surface disturbance of from 1 to 3 % of total land area within the DWMA if any alternative other than No Action is chosen.



**Other Land Uses:** Other than major transportation and utility corridors on the southern and eastern boundary, the area contains few developments. The most frequent developments are vehicle access routes for residences and other facilities on private lands, connector utility lines, rural dumps, and telecommunications sites. The telecommunications sites are primarily along I-40, and U.S. 95. The dumps tend to be small areas for household items and appliances created by rural residents or campers of yesteryear or today. No permitted landfills are located within the Piute-Fenner area. Although numerous, all of these developments are small in size.

**Land Tenure:** Approximately 139,000 acres (80%) of the Piute-Fenner Valley area are Bureau-managed public lands. Remaining lands are private (approximately 16%) and State (4%), with most private lands owned by two large corporations. These private lands were originally granted when the transcontinental railroad was built. Catellus Development Corporation is affiliated with the railroad and is responsible for the largest block of private holdings.

Although existing development is low, potential here is relatively higher than in the other areas of the planning area because of the existing checkerboard land ownership pattern. Catellus is currently actively seeking ways to develop lands, either on existing parcels or by exchanging them for parcels in areas more favorable for development. The checkerboard land-ownership pattern is a major basis for potential threats to desert tortoise. Currently no coordinated conservation planning exists across jurisdictional boundaries. Other specific land-use conflicts may also arise from adjacent agencies and landowners pursuing different and potentially incompatible goals, or having inadvertent indirect impacts such as from dumping which attract ravens and other tortoise predators.

An exchange agreement between the BLM and Catellus has been developed which reflects a large-scale exchange program, similar in scope and rationale to the West Mojave Land Tenure Adjustment Project Agreement approved in 1991. In addition to desert tortoise critical habitat, this exchange agreement included wilderness and other lands associated with the California Desert Protection Act of 1994. Phase I of the agreement was approved by Congress in 2000, and 81,000 acres in the planning area was acquired in exchange, much of which is in the Piute-Fenner Valley area. Land tenure acreage numbers within the Piute-Fenner DWMA have not yet been recalculated to reflect this exchange.

### 3.13.2.2 Ivanpah Valley

The Ivanpah Valley area is approximately 37,280 acres of land bounded by the Mojave National Preserve at Nipton Road on the south and southwest, a powerline road parallel to and south of I-15 across Ivanpah Dry Lake on the northwest and north, and the Nevada border on the east. Activities on the lakebed consist of permitted activities primarily associated with utility maintenance, permitted international wind-dependent events, and ancillary monitoring facilities associated with the MolyCorp Mine. Development potential for the northern portion of the lakebed outside of the Ivanpah Valley DWMA area, particularly adjacent to existing casino developments, is considered high.



**Vegetation & Related Natural Values:** Natural vegetation communities are primarily Creosote bush series and Mixed saltbush series on the basin floor. Other less common communities include Big galleta series, Indian rice grass series, Fourwing saltbush series, Shadscale series, Winter fat series, Mesquite series and Greasewood series. No special status plants occur in this area.

**Other Wildlife Values:** Wildlife species include a variety of animals typical of creosote bush flats and playas in the Mojave Desert. Common species are similar to those found in Piute-Fenner Valley. Additional common species associated with Ivanpah Dry Lake include horned lark and various shorebirds.

### **Special Status Species:**

**Desert Tortoise:** The area is currently designated BLM Category I desert tortoise habitat and, the southern two-thirds is also designated critical habitat. The non-lakebed portion of the valley is excellent quality desert tortoise habitat, with some of the highest population densities in the East Mojave. The southern portion of the lakebed is also occupied by desert tortoise, but the habitat values are lower.

**Cultural and Native American Values:** Ivanpah Valley is Class “L” to protect identified values, to include cultural values and Native American concerns. Recorded site types in the area include village, temporary camps, lithic scatters, and many historic sites. Historic period sites include portions of the Von Schmidt Boundary and Old Traction Road. The southern shore of Ivanpah Lake has been previously nominated to the National Register of Historic Places.

**Cattle Grazing (and Allotments):** The public lands in Ivanpah Valley DWMA are also public rangelands with permitted cattle grazing authorized, generally at moderate levels. The entire area is in three perennial/ephemeral allotments with current preference of 1630 AUMs, which allows 165 cattle to graze year-long in the allotments.

**Linear Utility Corridors:** A small portion of utility corridor BB is within the northern boundary of the Ivanpah Valley area, which is formed by the existing Southern California Edison utility maintenance road parallel to I-15. Corridor BB is an east-west corridor, three-miles wide, which follows and includes lands adjacent to I-15. Most of the utilities have been sited across Ivanpah Dry Lake bed, which is immediately adjacent and generally to the north of the Ivanpah Valley DWMA. Major utilities located in this corridor include one 131 KV Alternating Current Transmission Line (Southern Cal Edison), two gas pipelines and two fiber optic cables. This corridor also includes interstate 15. The southernmost main utility maintenance road parallel to I-15 forms the proposed boundary of the Ivanpah DWMA.

**Recreation Activities and Vehicle Access:** Organized non-motorized recreation occurs on Ivanpah Dry Lake, including landsailing, kite buggying, long distance archery, and some of the landsailing competitions are considered world-class events. The lakebed is closed except by permit, to prevent damage from other activities that may interfere with international wind-dependent events, which require a very smooth surface. South of the



dry lakebed, the area is primarily used for very low-level, widely dispersed motorized recreational activities. Casual public users primarily tour through this area rather than having particular destinations in mind. Since the area is adjacent to and north of the Mojave National Preserve, the area north of Nipton Road provides dispersed camping areas for some MNP visitors that would prefer not to camp in designated camping areas. Other recreational uses in the area include hunting, recreational shooting, and rock hounding. Occasionally, organized, permitted, motorized or non-motorized touring activities are authorized in the area.

**Mineral Potential and Historic and Current Mining:** There is a portion of the 5,000-plus acres on Ivanpah Dry Lake having moderate potential for development of salt resources located south of the second powerline maintenance road, that is within the Ivanpah Valley area.. It has a known sodium chloride body at 2,000 feet depth.

**Land Tenure:** Approximately 94% (35,200 acres) of the total 37,280 acres of the Ivanpah Valley area are public lands, with the remainder of the lands in private ownership.

### 3.13.2.3 Northern Ivanpah Valley

The Northern Ivanpah Valley area is approximately 29,110 acres of land bounded by I-15 on the south, the California-Nevada border on the east, Mesquite Valley on the north, and the Clark Mountains on the west. The easternmost portion of the valley includes extensive private land and is undergoing substantial development at the Nevada border. This development includes casinos and associated hotels, restaurants and other tourist attractions, including a nine-hole golf course. Primary uses in the Northern Ivanpah Valley area include non-competitive landsailing on the west side of Ivanpah Dry Lake and organized, permitted recreational activities including equestrian trail rides, cattle drives, and dual sport rides.

**Vegetation & Related Natural Values:** Same as Ivanpah Valley.

**Other Wildlife Values:** Same as Ivanpah Valley.

#### Special Status Species:

**Desert Tortoise:** The area is currently designated BLM Category I desert tortoise habitat, but it was not included in designated desert tortoise critical habitat. Most of the valley is considered good quality desert tortoise habitat, except at or immediately adjacent to areas that have been developed, such as near the state line or I-15.

**Cultural and Native American Values:** Northern Ivanpah Valley contains numerous sites and specific areas that have been identified as important to Native American tribes. An extensive number of prehistoric sites (e.g., rock art, temporary habitation sites, trails, roasting pits, lithic manufacturing sites and rock shelters) and many historic period sites



(e.g., Ivanpah townsite, mills, mines, shafts, Von Schmidt Boundary and the Old Traction Road) have been recorded within the Northern Ivanpah Valley area.

**Wild Horse and Burro:** The Northern Ivanpah Valley area includes wild burro concentration areas within the Clark Mountain Herd Area. Although this part of the Herd Area is not designated for the management of burros in the CDCA Plan and associated East Mojave Herd Management Area Plan, a population of burros has been occupying this range since prior to the passage of the 1971 Wild Free-Roaming Horse and Burro Act. There have been periodic removals of burros and currently an estimated population of 126 burros occupies this portion of the herd area. The range land health assessment performed in 1999 determined that:

- 1) the Clark Mountain Grazing Allotment is in healthy condition;
- 2) current grazing levels are appropriate for site conditions;
- 3) management is currently resulting in a sustained yield of resources.

**Cattle Grazing (and Allotments):** The Northern Ivanpah Valley area is also within public rangelands with permitted cattle grazing authorized. The Clark Mountain allotment is perennial/ephemeral with current preference of 1,303 AUMs, which allows 132 cattle to graze yearlong in the allotment.

**Linear Utility Corridors:** Two utility corridors transverse the Northern Ivanpah area. One of these is corridor BB, which is an east-west corridor that follows and includes lands adjacent to I-15. In this area, corridor BB splits in two, then rejoins at the California/Nevada state line. Two almost parallel portions of corridor are within the area or follow the southern boundary of the Northern Ivanpah Valley area, which is I-15. Major utilities located in this corridor are two 131 KV transmission lines, two gas pipelines and two fiberoptic cables. Utility Corridor D (the Boulder Corridor) is within the Northern Ivanpah area on its northern boundary, and most of the corridor width would be in the area, except for a slim corridor north of the main corridor road and south of designated wilderness. Major utilities located in this corridor include one 287 KV and two 500 KV alternating current transmission lines, one 500 KV direct current transmission line, one 40 inch gas pipeline and two fiber optic lines.

**Recreation Activities:** Primary uses on public lands include low-level, widely dispersed motorized recreational activities. Casual public users primarily tour through this area rather than having particular destinations in mind, as it provides a gateway from the east to the Mojave National Preserve. Other recreational uses in the area include hunting, recreational shooting, landsailing, horseback riding and rock hounding. Occasionally, organized, motorized or non-motorized touring activities are authorized in the area. The Barstow-to-Vegas Competitive race course forms the northern boundary of the Northern Ivanpah Valley area and some of the routes for past B-V events are evident within the Northern Ivanpah area.

**Other Major Land Uses:** There is some development associated with the casino/hotel complexes located at Primm Nevada (Stateline) including a golf course on the California / Nevada border.



**Land Tenure:** Approximately 94 percent (27,280 acres) of the 29,110 acres of the Northern Ivanpah Valley area are public lands.

#### 3.13.2.4 Shadow Valley

The Shadow Valley area is approximately 114,060 acres of land bounded by the Kingston Range on the north, I-15 on the south, the Clark Mountains on the east, and the Shadow Mountains on the west. Approximately 38,753 acres are within an area zoned as MUC "Moderate", 31,000 acres are within MUC "Controlled", and 44,307 acres are within MUC "Limited", according to the CDCA Plan, as amended. Multiple-use classes apply to Federal lands under Bureau jurisdiction only. In addition, 380 acres are segregated from the public land laws.<sup>1</sup> Very little development is occurring on public lands except within transportation and utility corridors.

**Vegetation & Related Natural Values:** Natural communities are primarily Creosote bush series and Joshua tree series. Other less common communities include Catclaw acacia series, Creosote bush - white bursage series, and Hop-sage series. No special status plants occur in this area.

**Wildlife Values:** Wildlife species include a variety of animals typical of creosote bush series in the Mojave Desert. Common species are similar to those found in Piute-Fenner Valley. Additional common species associated with Joshua tree woodland include common flicker, great-horned owl, desert spiny lizard, cactus mouse, and desert woodrat.

**Special Status Species: Desert Tortoise:** The area is currently designated as BLM Category I desert tortoise habitat and FWS critical habitat.<sup>1</sup> The valley has good quality desert tortoise habitat, but some signs of shell disease have been observed in the population in recent years. The Clark Mountain ACEC/HMP Plan discussed below has measures that address desert tortoise habitat issues.

**Wilderness Values:** Approximately 31,000 acres of the Shadow Valley area are located in four designated wilderness areas. The vast majority of the wilderness encompasses the entire Shadow Valley area north of the Boulder utility corridor. This consists of portions of three contiguous, adjacent designated wilderness areas: (1) approximately 20,700 acres in the southern and southeastern portion of the Kingston Range Wilderness (10%), (2) approximately 3,000 acres of the southern portion of the North Mesquite Mountains Wilderness (10%), and (3) approximately 5,600 acres of the southwestern portion of the Mesquite Wilderness (11%). In addition, approximately 1,600 acres of the westernmost portion of the Shadow Valley area overlaps a portion of the Hollow Hills Wilderness (7%). This corresponds to the wilderness acreage that is Category I and critical desert tortoise habitat. For more detailed descriptions of the four wilderness areas and their values, see BLM Booklet "Wilderness Areas, Maps and Information - Oct 94", available for review at all Bureau field offices within the California Desert District.

**Cultural and Native American Values:** Portions of this area have extremely important sensitivity. These resources are generally concentrated around springs, lake margins and



within the Turquoise Mountain vicinity (aboriginal turquoise mines). Mesquite Valley is currently used as a seasonal collection area by Native American peoples. The area has Native American values.

The Halloran Springs ACEC is located within the proposed tortoise Wildlife Management area. In addition a few small areas of high cultural sensitivity are scattered throughout the area including zones of prehistoric and historic activity. The historic sites are clustered in the vicinity of permanent water sources or near valuable ore deposits. Prehistoric values are associated with water and located near natural resources.

**Wild Horse and Burro Grazing:** The Shadow Valley area includes wild burro concentration areas and range, and the area overlaps approximately 84,900 acres (27%) of one herd management area that is currently managed for retention of burros. Burro grazing occurring in this area is the most intense within desert tortoise habitat in the East Mojave. The Clark Mountain Herd Management Area (HMA) currently has an Appropriate Management Level of 44 burros, a target number, which was set in the CDCA Plan. The population in the HMA was at its height with the adoption of the CDCA Plan, when it was estimated at 365 animals. The area is managed under the East Mojave HMA Plan, signed in 1984. After several years of removals and adoptions, population levels slowly decreased in the early 1990s. Populations have leveled off in recent years, peaking at about 250 earlier in 1999, prior to the latest removals. The latest census figures for Shadow Valley approximate the herd at about 150 in this area. Additional removals are planned and the AML is targeted to be achieved within three to five years.

**Cattle Grazing (and Allotments):** The public lands in this area are part of public rangelands with permitted cattle grazing authorized, generally at moderate levels (see Table 2-5 for details). However, cattle grazing in Shadow Valley is the most intense within desert tortoise habitat in the East Mojave. Approximately 104,800 acres (47%) of the Valley Wells Allotment is in the Shadow Valley DWMA (critical habitat).

In the 1980 CDCA Plan, the Valley Wells allotment was rated in "fair" range condition. A follow-up evaluation of the allotment was conducted during the spring of 1999. To date, the range assessment of Valley Wells has revealed some high utilization on key forage species. The native species component of the Fallback Standards and Fallback Guidelines is being minimally met due to the high burro concentration within Shadow Valley. Shadow Valley is the highest area of concentration for cattle and burros in the allotment due to accessible water sources and available forage.

A herd management area (HMA) occurs in part of the allotment and in some areas of Shadow Valley forage usage exceeds 40%. Presently the allotment is meeting all standards but a portion of the allotment, specifically Shadow Valley, is in a downward resource trend. The continuation of cattle and burro grazing at current levels within Shadow Valley could possibly cause the allotment to fail the native species component of the Fallback Standards and the Fallback Guidelines.

Specific parameters on use in the Valley Wells Allotment include the following:



- Cattle waters shall be managed to encourage summer use of higher elevations, outside of Shadow Valley.

**Linear Utility Corridors:** Utility Corridor D (the Boulder Corridor) transverses the Shadow Valley area, running roughly parallel to and north of I-15. Major utilities located in this corridor are one 287 KV and two 500 KV alternating current transmission lines, one 500 KV direct current transmission line, one 40 inch gas pipeline and two fiber optic lines.

**Recreation Activities:** Primary uses include low-level, widely dispersed motorized recreational activities. Casual public users primarily tour through this area rather than having particular destinations in mind. The exception is the Turquoise Mountain area, which is a relatively popular visitation area of rock hounds and other recreationists. Other recreational uses in the area include hunting, camping, wilderness hiking, and birding. Occasionally, organized motorized or non-motorized touring activities are authorized in the area. The Barstow-to-Vegas competitive race course transverses the Shadow Valley area through the Boulder Corridor and around the Turquoise Mountain area. Various old routes for the B-to-V events are evident through the area, some within the designated corridor and some outside of it.

**Mineral Potential and Historic and Current Mining:** The westernmost portion of the area may have potential for rare earth metals. Historic mining has occurred in the Turquoise Mountains in the 10,000 acres accessed by and east of Turquoise Mountain Road.

**Land Tenure:** Approximately 94 percent (106,960 acres) of the total 114,060 acres of land area are public lands. Most of the non-Federal lands consist of the two sections originally granted to the State for schools, with a few additional private parcels.

### 3.13.2.5 Pahrump Valley

The Pahrump Valley is bounded by the Nopah Range on the west and northwest, the Nevada State line on the east, Pahrump on the northeast and the Inyo - San Bernardino county line on the south. Scattered development is occurring on public lands associated with the dispersed rural population in the valley. This area is one of the less frequented gateways to Death Valley National Park and other recreational destinations from Nevada and is also an area used for dispersed recreation, and occasionally permitted OHV recreational activities.

**Vegetation & Related Natural Values:** Natural communities are primarily Creosote bush series. Other less common communities include Creosote bush - white bursage series, Joshua tree series, Indian rice grass series, Greasewood series, Mesquite series, and mixed saltbush series on the basin floor. No special status plants occur in this area.

**Wildlife Values:** Wildlife species include a variety of animals typical of creosote bush series in the Mojave Desert. Common species are similar to those found in Piute-Fenner



Valley. Additional common species associated within Pahrump Dry Lake include horned lark, various shorebirds, and Great Basin spadefoot toad.

**Special Status Species: Desert Tortoise:** This area includes approximately 172,000 acres of BLM Category III desert tortoise habitat. The area was not included as USFWS critical habitat. The valley has fair quality desert tortoise habitat. Approximately 85% of the total desert tortoise habitat (146,200 acres) are public lands. Category III desert tortoise habitat includes almost 15,000 acres of designated wilderness, almost 124,000 acres of MUC "Limited", just over 32,000 acres of MUC "Moderate" and 1,200 acres of "Unclassified" lands.

**Cultural and Native American Values:** Sensitive cultural values (high and very high) occur within this unit. The whole range of site types from simple, to complex, occur. Some of the sites are associated with presumed lacustrine adaptation. A portion of the planning unit includes areas traditionally used by federally recognized Native American tribes. Permanent village sites and temporary habitation sites are also located within this region. The Old Traction Road crosses the area.

**Wild Horse and Burro Grazing:** The Pahrump Valley area overlaps a small portion of the easternmost extent of the Chicago Valley Herd Management Area, which has an appropriate management level of 28 horses and 28 burros. The current horse herd is at four, and the burros are at 7 in the HMA. Forage is often supplemented by feedings offered by area residents, and forage use throughout the HMA is generally low.

**Cattle Grazing (and Allotments):** The public lands are also public rangelands with permitted cattle grazing authorized. The Pahrump Valley allotment is perennial/ephemeral with current preference of 353 AUMs, which allows 175 cattle to graze from February 15<sup>th</sup> to February 28<sup>th</sup> and 175 head March 1 to April 15 in the allotment.

**Recreation Activities and Vehicle Access:** Primary uses on public lands include low-level, dispersed motorized recreational activities. Casual public users primarily tour through this area rather than having particular destinations in mind. Other recreational uses in the area include hunting, landsailing and birding. Occasionally, organized, permitted, motorized or non-motorized touring activities are authorized in the area.

**Mineral Potential and Historic and Current Mining:** There are approximately 23,000 acres having potential for the occurrence of metallic mineral resources, 640 acres having potential for the occurrence of industrial minerals, 380 acres having the potential for the occurrence of construction materials within critical habitat for the desert tortoise. In addition, there are nearly 50,000 acres having potential value for oil and gas (within the overthrust belt) within critical desert tortoise habitat.

### 3.13.3 AMARGOSA VOLE ACEC PROPOSAL

**Biological:** Critical habitat for the Amargosa Vole has been designated (Federal Register Volume 49, No. 222, 1984). It includes approximately 2,440 acres of public land located



south of Shoshone, along the Amargosa River, primarily within the Grimshaw Lake Natural Area ACEC located north of Tecopa, California, and the Amargosa Canyon Natural Area located south of Tecopa (see Chapter 7, Figures 9a and b and Appendix H). Additional public lands, outside the ACEC are included in this critical habitat unit and are located north and east of the Grimshaw Lake Natural Area ACEC. This critical habitat designation also encompasses private lands located east of Grimshaw Lake Natural Area and State lands located between the Amargosa Canyon Natural Area and Tecopa. Public and private lands that exist between these two ACECs form a critical link for Amargosa vole between the two natural areas. Lands north of the Grimshaw Lake Natural Area ACEC continue the riparian habitat found in the ACEC and are also good quality vole habitat.

**Special Status Plants and Animals:** The China Ranch Canyon Area is a mile-wide and three-mile long stretch of public lands located adjacent and east of the existing Amargosa Canyon Natural Area ACEC. This canyon is a tributary of the larger Amargosa River and supports little water flow except at springs and following heavy precipitation events. The riparian, wetland and spring habitats present within this canyon are suspected to support Amargosa voles, Amargosa southern pocket gophers (*Thomomys umbrinus*), several species of endemic springsnails (*Pyrgulopsis* spp.), as well as a host of other riparian obligate and endemic species.

The type locality for the Amargosa vole has been identified as a small spring located adjacent to the Amargosa River in the vicinity of Shoshone, California. It is unclear whether or not the species still occurs in this portion of the Amargosa River, though the riparian and adjacent hill terrain are known to support several endemic species, particularly rare invertebrates such as the Shoshone Cave whip-scorpion (*Trithyreus shoshonensis*) and Shoshone Cave millipede (*Colactis briggsi*). To protect the former species, the Shoshone Cave HMP Area was designated in the CDCA Plan and an HMP (BLM and CDFG 1982) was subsequently prepared.

Another Amargosa River endemic species, the Tecopa pupfish (*Cyprinodon nevadensis calidae*), once occurred in this vicinity but is considered extinct due to human alteration of associated spring habitat. A third Amargosa River endemic, the Shoshone pupfish (*Cyprinodon nevadensis shoshone*), is known only from a small spring (Shoshone Spring) located on private lands in the town of Shoshone. The continued existence of this species is precarious, as its sole habitat area is threatened by human alteration, including reduced instream water flow, pollution, exotic plants and competition with the introduced mosquito fish (*Gambusia affinis*). A fourth Amargosa River endemic species, the rare Amargosa pocket gopher (*Thomomys bottae amargosae*) is also known from the Shoshone-Tecopa river corridor.

Portions of the Amargosa River between Shoshone and Grimshaw Lake at Tecopa Hot Springs, California, support varying stand densities of a productive mesquite (*Prosopis* spp.) bosque -saltgrass meadow-wetland complex, important to Amargosa pupfish (*Cyprinodon nevadensis amargosae*), numerous neotropical migratory bird species, a variety of desert bats, and wild horses (Chicago Valley herd). However, in the Amargosa River vicinity of Shoshone a considerable amount of this habitat is located on private



lands. Only small pockets of this habitat type occur on public lands in this river segment, separated by barren stream segments.

Introduced animals, particularly the domestic cat (*Felis catus*) in the vicinity of Tecopa Hot Springs, and wild horses (*Equus caballus*) in the vicinity of Death Valley Junction, as well as the spread of the exotic plant saltcedar (*Tamarix ramosissima*) along the entire river, are also an ongoing concern in their relation to listed species, riparian and wetland habitats. An exotic plant removal and riparian restoration program has been initiated by the BLM in both the Amargosa Canyon and China Ranch Wash areas of the Amargosa River, and is anticipated to benefit Amargosa vole; neotropical migratory bird species, such as the State and federally-listed and endangered least Bell's vireo (*Vireo bellii pusillus*) and the State listed endangered western yellow-billed cuckoo (*Coccyzus americanus occidentalis*); numerous bat species; and a host of other riparian obligate species.

**Water:** The Amargosa River is the focal hydrologic system of the Northern and Eastern Mojave (NEMO) Planning Area. The hydrologic systems of the southern Great Basin and northern Mojave Desert are generally characterized by deep water tables. They are also considered primarily closed groundwater basins.

One of only two large rivers in the Mojave Desert, the free-flowing Amargosa is largely subterranean. It begins its southerly, largely underground flow near Beatty, Nevada. A 10 mile-length segment of the river supports shallow, perennial water flow near in Oasis Valley in Nevada, but this "bitter water" river then generally flows in a sub-surface fashion as it bisects the remainder of the Amargosa Desert in Nevada. It flows adjacent to Stateline, Nevada and then southerly through the towns of Death Valley Junction, Shoshone and Tecopa, in California. It crosses State Highway 127 and terminates in the lowest elevation area in the United States: Badwater Basin, within Death Valley National Park (DVNP).

Water runoff from the Bullfrog Hills, Yucca Mountain, Shoshone and Spring Mountains, in Nevada, all contribute to Amargosa River water flow in California. The latter Spring Mountain area is suspected to provide a large amount of this runoff contribution. The Lower Carson Slough tributary of the Amargosa, drains Ash Meadows and the southern portion of the Amargosa Desert in Nevada. These watersheds contribute to a largely subterranean Amargosa River at Franklin Playa in California. Several mountain ranges and alluvial basins in California, particularly Eagle Mountain and the Resting Spring Mountain Range in the upper California reaches of the river, the Nopah and Kingston Mountain Ranges, as well as California Valley, progressively add to central Amargosa River water flow. Major tributaries include the aforementioned Lower Carson Slough in the northern reach of the river, China Ranch Wash in the central reach, and Salt Creek in the southern reach of the river. Drainage from the Kingston Range to the east-southeast and from Ash Meadows Wildlife Reserve on the other side of Pahrump Valley in Nevada funnel into this narrow, steep canyon in route to the Amargosa ACEC, Grimshaw Lake ACEC.



The Amargosa flows extensively underground, surfacing perennially at only two areas in California (Shoshone-Tecopa hot springs and Tecopa townsite-Sperry siding). Ephemeral surface flows and salt flats are common in the Upper reaches of the Amargosa River. Shallow perennial water flow and clay-hole ponding are common in the Shoshone Reach of the river. Perennial ponding, as well as ephemeral mudflats, are common in the Grimshaw Reach of the river. A substantial perennial water flow begins in the Amargosa Canyon Reach, which continues to the Sperry siding of the abandoned Tonapah & Tidewater Railroad. Between Sperry siding and the eastern boundary of Death Valley National Park at State Highway 127, water flows over the years have alternated between intermittent and perennial flows, with ponding occurring in ephemeral years. Shallow, perennial flows beneath State Highway 127 have been recorded as the norm in recent years, following largely ephemeral flows in the early 1990's. These ephemeral and/or perennial surface water flows contribute to the subterranean flow, which terminates in Badwater Basin.

Lands along the river in California are largely in Federal ownership, i.e., approximately 53.25 riverine miles are public lands managed by the BLM and approximately 45 additional riverine miles occur within DVNP. Substantial private ownership (3.5 riverine miles) occurs along the river in the vicinity of Shoshone, both north and south of State Highway 178. A degree of river diversion and modification has also occurred on the north (Shoshone) side of State Highway 178. A total of 2.5 riverine miles are also privately owned in the Grimshaw Lake Reach of the river; as is a total of 2.5 riverine miles in the Amargosa Canyon Segment.

**Cultural:** The Central Amargosa Vole habitat (Amendment # 5) includes approximately 6,900 acres of public lands, portions of which are within the designated Amargosa and Grimshaw Natural Area ACECs. Sensitive historic (principally the Tonapah and Tidewater Railroad) and prehistoric (temporary camps and possible village sites) cultural resources occur in the identified habitat both within and outside of the existing Amargosa Canyon and Grimshaw Lake Natural Area ACECs. Significant cultural resources (primarily associated with nearby springs, associated riparian areas) as well as Native American seasonal collection areas and traditional use areas have been identified. Recently acquired lands south of China Ranch include both prehistoric and historic values including milling sites, lithic scatter, trails, and a historic structure built in 1903. The habitat is currently managed under MUC "L" guidelines. Lands identified for exchange out of Federal ownership contain a known prehistoric campsite, historic period mine and house and an identified 20<sup>th</sup> century grave.

The T&TRR, abandoned and dismantled in the 1940's, parallels the river for a majority of its length in California. This railroad once crossed the river on wooden bridges at several sites in California, though only three historic crossings occurred in the high water flow segment of the river occurring between Shoshone and Sperry siding. A pedestrian trail now exists on the T&TRR, which is breached in many areas between Shoshone and Sperry siding. Few roads occur immediately adjacent to the river in the Shoshone to Sperry siding segment, although State Highway 178, Tecopa Hot Springs Road and Old Spanish Trail Highway do cross this river, widely spaced over a 21-mile span of the river. Several roads parallel and cross the river in the Sperry siding to State Highway 127



segment of the river. Further, an access road to the popular Dumont Dunes Off-highway Vehicle Area parallels the river in this segment for four miles, crossing the river once at the entrance to this public land use area.

**Recreation:** Both the Amargosa Canyon and Grimshaw Lake Natural Area ACECs are popular hiking and nature appreciation areas, as is China Ranch Wash. China Ranch is a popular tourist attraction at the west end of the canyon, surrounded by the Amargosa ACEC, and includes a date farm and trailed, riparian area in the midst of this canyon. Both ACECs have been designated as national Watchable Wildlife Sites and are listed on numerous maps as well as in several guidebooks. No active livestock or mining operations occur within these areas, although geothermal operations were once proposed for the area adjacent to Grimshaw Lake Natural Area and trespass livestock grazing is an ongoing concern in Amargosa Canyon. Motor vehicles are prohibited within these natural areas, with the exception of parking areas located at major trailheads. Fire activity is fairly low, and resource advisors are used to address fire suppression activities.

Tecopa is one of a few towns in the northern half of the Planning Area, and has a small permanent population and a larger seasonal population during the winter months. Located immediately north of Tecopa are hot springs that support several hot spring resorts and campgrounds. The larger town of Shoshone is located north of Tecopa. Shoshone is located at the junction of State Highways 127 and 178. Its tourist attractions include its own hot springs located within the town and its location as the eastern gateway to Death Valley National Park.

The 160 acres of public lands being considered for reclassification (made available for disposal, by sale or exchange, to private parties) are located south of and within a mile of the main road of the town of Tecopa in the southern half of T20N, R7E, Section 10, SBBM (see USGS 7.5 minute topographical quadrangle map named "Tecopa, CA"). Residential development is occurring on all but the canyon side portion of the parcel.

**Mineral Potential and Historic and Current Mining:** In 1967 an exploratory well was drilled. Strong artesian flow occurs from this well near the boundary of the existing and proposed ACEC extension in SW1/4 Section 28, T.21 N., R.7 E. and just north of Tecopa's hot springs. The water continues to rise to the surface and flow into the marsh. In 1970 the temperature was 100 degrees at the surface and flowing at 150 to 200 gallons per minute.

The Inyo County Transportation Department produces between 500 and 600 tons per year of sand and gravel from a borrow pit within the west boundary of the study area and just northeast of Furnace Creek Road in NW1/4 Section 29, T.21 N., R. 7 E. There are no other current mining operations in the Amargosa area.

The area has moderate potential for the occurrence of saline, sodium borate deposits based on past production of borax from a spring from 1882 to 1890. The potential for production of borates in this area within the foreseeable future (next 25 years) is probably low based on a lack of production over the last 100 years.



The entire Planning Area in the vicinity of Tecopa is within an area classified by BLM as valuable prospectively for geothermal resources based on a well which produced hot water in the recent past in addition to hot springs in the general area. The potential for future production of geothermal energy within the Planning Area boundaries is probably low. Any future development of geothermal resources would probably be limited to such things as the heating of bathhouses or buildings.

Regarding the Upper Amargosa portion of the Planning Area, Southern Clay Products has applied for a mineral patent on about 225 acres in Section 31, T.27 N., R.5 E, and Section 6, T.26 N., R.5 E. Hectorite clay at this site has been mined since 1974 and occurs in a shallow, elongated deposit oriented northwest to southeast situated southwest of the Amargosa River drainage. In Section 31 the patent application block comes within 700 feet of the Amargosa River and in Section 6 it comes within 1,300 feet. Southern Clay Products has two open pit mines for hectorite clay within the area and is currently mining at a rate of about 5,000 tons per year. This area is within lands classified by BLM as a Potential Geothermal Resources Area by BLM, but the potential for occurrence is difficult to assess because there is no data on ground water temperature. Therefore the potential for development is also difficult to assess, although development, if hot water were discovered, would probably be limited to such things as heating bathhouses and buildings.

### 3.13.4 LOWER CARSON SLOUGH T&E PLANTS

**Vegetation:** Vegetation is sparse throughout the Lower Carson Slough drainage, where a salt-encrusted alkaline playa dominates. However, the State and federally-listed endangered Amargosa niterwort; the federally-listed threatened Ash Meadows gumplant; the federally-listed threatened spring-loving centaury, the BLM designated sensitive plant Tecopa birdsbeak (*Cordylanthus tecopensis*), iodine weed (*Suaeda torreyana ramosissima*), and saltgrass (*Distichilis spicata*) occur patchily throughout the drainage. The Lower Carson Slough drainage area bisected by Ash Meadows Road has been designated as the Salt and Brackish Water Marsh UPA in the CDCA Plan.

Numerous special status plant surveys have been conducted in the Lower Carson Slough, including a 1993 survey undertaken by DVNP personnel. Older surveys (1970s) were used by the USFWS to delineate critical habitat units for two listed plant species, Amargosa niterwort (1,200 acres) and Ash Meadows gumplant (1,968 acres which includes California -340 acres and Nevada - 1,628 acres), in the mid 1980s (Federal Register Volume 50, No. 97, 1985). The latter critical habitat unit is situated at the California-Nevada border, 2.5 miles north of Ash Meadows Road; whereas the former critical habitat unit is situated on both sides of Ash Meadows Road (See Chapter 7, Figure 10).

The critical habitat designation for Amargosa niterwort and Ash Meadows gumplant lists depletion of local and source water aquifers, road construction and maintenance, trampling by wild horses, mining and off-road vehicle activity as the primary threats to Carson Slough plants and associated habitat. Amargosa niterwort plants and several acres



of associated playa habitat were damaged within the critical habitat unit in the course of both trespass activities and legal mining claim marker installation.

**Mineral Development:** Mineral exploration in the vicinity of Franklin Playa and in the Lower Carson Slough area north of Ash Meadows Road has been ongoing for several years, though no large-scale mining operation has been proposed for the area. The subject area is dotted with prospect pits for such commodities as clays, zeolites, borates or sodium minerals. The nearest recently active mine is an open pit mine for zeolite located one and a quarter miles east of the southeast corner of the Carson Slough.

The subject ACEC proposal is within lands classified as a Potential Geothermal Resource Area by BLM. The potential for occurrence of geothermal resources in this area is difficult to assess because there is no data on ground water temperature, but if hot water were discovered, it would probably be limited to such things as heating bathhouses and buildings. The subject ACEC proposal is also within lands classified by BLM as prospectively valuable for sodium resources based on historical prospecting permits for sodium minerals on Alkali Flat three miles to the south<sup>1</sup>.

**Wild Horse and Burro:** The Chicago Valley wild horse herd uses an artesian spring in the center of Franklin Playa and regularly traverses the playa between Death Valley Junction and Eagle Mountain.

**Land Use / Development:** The town of Death Valley Junction, one of the main gateways to DVNP, currently supports only a handful of residents, though the town is an occasional stop for tourists visiting DVNP and the Death Valley Junction Opera House. Park tourism is the primary recreational activity in the immediate area. Road maintenance of Ash Meadows Road, on both sides of the state border, also occurs regularly.

### **3.13.5 SILURIAN HILLS BAT HABITAT MANAGEMENT PLAN (HMP) PROPOSAL**

**Wildlife:** The Silurian Hills area is a semi-mountainous region centrally located in Silurian Valley. It is bounded on the west by a flat plain, Silurian Dry Lake and Salt Creek; on the east by a flat plain and the Shadow Mountains; with Kingston Wash and Valjean Valley located to the north; and the Hollow Hills located to the south. Public lands in this area total approximately 7,400 acres, with a scattering of patented lands located immediately to the south.

Numerous washes dissect the plain that surrounds this mountainous island, and both cliff faces and crevice slopes are common in the Silurian Hills. Mine shafts and adits are also quite numerous, and at least four bat species are known to use these shafts and adits as roosting, hibernation or maternity sites. Additional bat species are suspected to use the area as well. Habitats crucial for a wide variety of desert bat species surround the Silurian Hills such as desert washes, springs, desert riparian areas, sand dunes, crevice slopes and mountains. The Kingston Wash is suspected to be a major bat foraging use area and flight travel corridor into the Kingston Mountains. The Salt Creek Hills and riparian area are



both a major bat foraging and roosting area and are suspected to serve as a crucial flight travel corridor into the Avawatz Mountains, where numerous spring foraging, and bat roosting sites occur. This same corridor is also important for bat species that use the Ibex Dunes and Dumont Dunes as well as portions of DVNP.

**Mineral Development:** The Silurian Hills region is within an area having moderate to high potential for the future discovery of metallic minerals, mainly silver. The subject area has mostly low potential for talc resources, but two areas of high potential, one in the west half where there are known occurrences, and one in the southeast corner where there has been past production.

Mines in the Silurian Hills have produced lead, copper, silver, gold, and talc. In the Riggs District, the patented Riggs mine, within 1,500 feet of the southern boundary of the area, produced 200,000 ounces of silver up to 1920 and has been idle since except for recent drilling. Assays at another claim group in the southeast part of the Silurian Hills identified silver values to 2.85 ounces per ton and copper to 36 pounds per ton. Additional mining claims, located ½ mile south of the area have been actively worked for silver and lead for many years.

Idle talc mines known collectively as the Patricia-Blue White-Ceramic zone occur in the southeast corner of the Silurian Hills. The Ceramic mine produced up to 1,000 tons from 1940 to 1942. Workings consist of shallow exploratory excavations, several adits, and a 40-foot inclined shaft and several cuts. The patented Silver Lake talc deposits, 3 miles to the south of the area, produced over 160,000 tons from 1915 through the 1950s.

The potential for future development is difficult to assess. Unless commodity prices increase, production of metallic minerals such as lead, silver, and gold would probably be limited to small, two-man operations in underground workings such as adits. Talc production is anticipated to be low based on the lack of production within the area over 50 years, the small volume of past production, and the fact that no plans of operation have been received.<sup>1</sup>

**Cultural and Native American Values:** The area contains evidence of early twentieth century mining and one recorded petroglyph site. Additional historic period mining sites are located south of the identified area. A portion of the Tonapah and Tidewater railroad line traverses the area.

**Vehicle access:** The Silurian Hills and adjacent land receive light permitted and casual recreational use. This is a challenging place for desert touring and exploration. Travel is difficult and rough because there are generally few routes and none are maintained. Occasional route proliferation is associated with visitation to some of the historic mining areas.



### 3.13.6 RELEASED WSA MUC PROPOSALS

The following are descriptions of areas proposed for a Multiple-Use Classification other than the MUC prescribed in the CDCA Plan.

**Cerro Gordo:** The 21,244 acres of public lands surrounding the Cerro Gordo ACEC and National Register of Historic Places District that was originally designated as MUC Moderate were designated as high sensitivity under the CDCA Plan. Lack of inventory data precluded a higher sensitivity rating although there were indications that the mesas probably contained unrecorded cultural resources. This area has been subject to some recent archeological assessment as a result of mineral activity. Additional data and analysis has identified substantial resources and values, after the initial classification, which would warrant consideration of MUC L. Additional sites have been located that are probably associated with the mining town of Cerro Gordo, a National Register property. This is an area of high sensitivity for prehistoric resources as well.

**Surprise Canyon:** The approximately 4,390 acres of public lands remaining in the Surprise Canyon ACEC would continue to be managed as an ACEC. Approximately 8,778 acres of formerly public lands is now under NPS jurisdiction and not subject to public lands designations, including ACECs. Approximately 849 of the 1,920 acres of BLM-managed lands released from wilderness review is an area where changing conditions, and additional data and/or analysis indicate a need for consideration of MUC L to protect sensitive resource values and for consistency with surrounding lands. This is the eastern portion of Middle Park Canyon. This area is prime habitat for a large and diverse group of plants and animals, including sensitive species. Elevations range to 7,000 feet in the eastern portion of the area, and topography is often steep. When the area was determined not suitable for wilderness, the record stated that the recommendation should be "implemented in a manner, which will use all practical means to avoid or minimize environmental impacts".

**Greenwater:** Approximately 3,000 of the 34,720 acres of BLM-managed lands released from wilderness review is being considered for a change of Multiple-Use Class. It is an area where changing conditions, and additional data and/or analysis indicate a need for consideration of MUC L to protect sensitive raptor, bighorn sheep, Category III desert tortoise habitat, and other wildlife and plant community values and for consistency with surrounding lands. This area was originally designated as MUC M along northern boundary of released lands in the 1980 CDCA Plan based on mineral values. This 3,000-acre area is adjacent to 849 acres designated as the Greenwater Canyon Cultural ACEC.

**Eagle Mountain:** The CDCA Plan classified these lands as MUC "M" east of the T&T and MUC "L" west of the T&T. The rationale was that there was ongoing mining activity (west) and to protect sensitive wildlife, cultural, riparian values to the east. (Three sites determined eligible for the National Register and highly sensitive wildlife). The values that provided the rationale for MUC "L" are greater on the lands with the underlying MUC "M" classification, which include lands sacred to native, indigenous, tribes and T&E plant locations recorded since the CDCA Plan analysis.



**Dumont:** The CDCA Plan classification for these lands is MUC L and MUC "M". This area is immediately adjacent to and south of the Dumont Dunes OHV Open Area and adjacent to and north of the Salt Creek ACEC. Recent new information has been gathered on MUC M lands in conjunction with surveys conducted on expansion alternatives for Fort Irwin National Training Center identifying 27 previously unidentified highly sensitive cultural resources. The historic Tidewater and Tonapah Railroad bed forms the eastern boundary of this area, which additionally has now been determined eligible for the National Register of Historic Places. The previously unidentified Mojave fringe-toed lizard now designated BLM-Sensitive (not identified in the CDCA Plan, 1980, as amended) have been found on lands now classified MUC "M". There is a high potential for additional habitat for this species to the west, south and east of the Dumont Dunes area. Therefore these lands are being considered for a change in Multiple-Use Class

**Boulder Corridor E & W:** Approximately 4 of 10 miles of the corridor within the western end of the Shadow Valley Desert Tortoise DWMA is being considered for a MUC change from M to L based on critical desert tortoise habitat. The other 6 miles outside of critical habitat is not being considered for change from MUC M. There would be approximately 12 additional corridor miles to the east outside of proposed DWMA's in Mesquite Valley at the Nevada border, which is being considered for a change from MUC L to M based on consistency with the level of activities on surrounding lands. These lands are primary corridors for major utilities between the Los Angeles and Las Vegas Basins.

**Avawatz:** Almost all of the underlying area of released lands was designated as MUC M in the CDCA Plan to provide access for exploration and development of mineral potential and recreational values. Additional data and/or analysis indicate a need for consideration of MUC L to protect sensitive resource values. However, substantial new information has not been identified since the CDCA Plan analysis. This area is adjacent to MUC M lands and lands managed by the military.

**East of China Ranch:** The CDCA Plan underlying classification for this 4,010 acres is primarily MUC L, with two areas of MUC M, each under 500 acres: one located in the northeastern portion encompassing a portion of the canyon and the plateau that was the Old Bon Mesa mill site; and the other in the southeast portion along a portion of Sperry Wash. The CDCA rationale for MUC M was to facilitate historic mining access. In the past decade, the Bon Mesa site has been cleaned up and both hazardous and non-hazardous materials have been removed from the site. The surrounding MUC L lands are a highly sensitive wildlife corridor, which includes the main China Ranch Wash and side canyons including a portion of Sperry Wash, that provide riparian habitat for many endemic species including potential habitat for the federally endangered vole.

**Mesquite Spring:** The original MUC in the CDCA Plan was M in order to provide vehicle access for recreation and mineral exploration while mitigating impacts of permitted uses on desert resources, particularly for historic and prehistoric values. Access is now provided into the Mojave National Preserve, which surrounds this area on two-thirds of its length. Adjacent to the parcel on the third side is the Crucero/Mesquite



Hills Cultural ACEC. Historic and prehistoric resources are now known to be more common and more sensitive than originally believed in this area, based on information developed in conjunction with ACEC planning. Recreation use is affected by the proximity of the Razor Open Area to the northwest, and vehicular use is primarily focussed in the Mesquite Spring area. Therefore the entire area is being considered for Multiple-Use Class L.

### 3.13.7 GREENWATER CANYON PROPOSED ACEC DELETION

Prior to the California Desert Protection Act of 1994, the Greenwater Canyon ACEC included approximately 3,000 acres of public lands in the Greenwater Mountains of southeastern Inyo County and was established for cultural resource protection. Approximately 73 percent of the ACEC is now under Death Valley National Park jurisdiction. There are no known archaeological sites or cultural resource values in the remaining 820 acres of public land, although a minor amount of desert wash and riparian habitat would be affected. BLM Public lands in the area are managed under the existing Greenwater Canyon ACEC Plan.

### 3.13.8 ORGANIZED COMPETITIVE VEHICLE EVENTS

**Vegetation:** The Barstow-to-Vegas course crosses creosote bush (*Larrea tridentata*) shrubland, blackbrush (*Coleogyne ramosissima*) shrubland, mixed desert shrubland, and desert wash. No federal or state listed threatened or endangered plant species are known to occur along the routes.

Creosote bush communities vary considerably in composition and diversity. This plant community is found throughout the region at elevations of 1,000 to 3,000 feet. Creosote is the dominant species with generally burrobrush (*Ambrosia dumosa*) or four-winged saltbush (*Atriplex canescens*). Other typical species are joint-fir (*Ephedra sp.*), little-leaved ratany (*Krameria parvifolia*), thornbushes (*Lycium cooperi*, *L. andersoni*), galleta grass (*Hilaria rigida*), Indian rice grass (*Oryzopsis hymenoides*), mallow (*Sphaeralcea ambigua*) and desert straw (*Stephanomeria pauciflora*).

The blackbrush community occurs on the slopes of Clark Mountain at elevations of 4,000 to 5,000 feet. Blackbrush is the most common species. Others are spiny mendora, California buckwheat, joint-fir and desert rue (*Thamnosoma montana*). Washes contain acacia, snakeweed, and spear-leaved Brickellia (*Brickellia arguta*).

Mixed desert shrubland and desert washes contain a variety of species such as rabbitbrush (*Chrysothamnus paniculatus*), paper bag bush (*Salazaria mexicana*), Joshua tree (*Yucca brevifolia*), Mojave yucca (*Yucca schidigera*), beavertail (*Opuntia basilaris*), and silver cholla (*O. Echinocarpa*).

The vegetation along the 1990 proposed course has not fully recovered from previous years' events. Some shrubs have died and numerous plants show signs of damage. These plants exhibit broken branches, splits in the main stem/trunk, and overall reduction



in the extent of aerial canopy. Due to the drought conditions being experienced in the desert region, plant vigor and regrowth potential is poor. Reduced growth rates, die-back, extended dormancy, and in some cases death of the plant are common signs currently being exhibited by plants in the desert. Regrowth along the race corridor has been poor.

The proposed route around Solomons Knob in the Needles Resource Area was last used in the 1974 race. A 1990 field inspection of that segment showed little regrowth of vegetation. After 16 years, plant cover was ocularly measured to be only 10 percent of that found adjacent to the race course. Much of that portion of the course has no plant cover, and effects of soil erosion are evident. Portions of the route utilize an existing dry wash and sparse vegetation is normal.

One federal candidate species, Rusby's desert mallow (*Sphaeralcea rusbyi* spp. *Eremicola*), occurs directly adjacent to the Barstow-to-Vegas course in the vicinity of the Clark Mountains. This low growing perennial herb exists along a four-mile stretch adjacent to the powerline road north of the Clark Mountains.

There is a potential that bicolored penstemon (*Penstemon bicolor* spp. *Bicolor*) a federal candidate and a Nevada watchlist species, occurs adjacent to the course in Nevada. The habitat for this species is similar to that found along the Barstow-to-Vegas course, and has been found within 5 miles of the course (Analysis from the 1990 Environmental Assessment CA-060-EA0-01).

**Wildlife:** The race course as depicted in the CDCA Plan passes through 33.5 miles of BLM Category I and 16.4 miles of Category III desert tortoise habitat. This alignment also crosses approximately seven miles of bighorn sheep habitat in the vicinity of the Clark Mountains. Wildlife and plant values are further described in the Wildlife and Vegetation Elements of the CDCA Plan.

Habitats crossed by the Barstow-to-Vegas course include creosote bush (*Larrea tridentata*) shrubland, blackbrush (*Coleogyne ramosissima*) shrubland, mixed desert shrubland, and desert wash. Wildlife species characteristic of these desert habitats include coyotes (*Canis latrans*), black-tailed jackrabbits (*Lepus californicus*), white-tailed antelope squirrels (*Ammospermophilus leucurus*), desert kit foxes (*Vulpes macrotis arsipus*), red-tailed hawks (*Buteo jamajcensis*), horned larks (*Eremophila alpestris*), zebra-tailed lizards (*Callisaurus draconoides*), and sidewinder rattlesnakes (*Crotalus cerastes*).

The course crosses approximately seven miles of desert bighorn sheep (*Ovis canadensis nelsoni*) habitat in the Clark Mountain area. The desert bighorn sheep is a BLM sensitive species and is fully protected by the State of California. The Clark Mountain herd was estimated in 1988 to have 150 sheep. Bighorn regularly travel between different ranges, and some movement of bighorn sheep between the Clark Mountains, New York Mountains, and neighboring ranges in Nevada is likely.



In addition to the desert bighorn sheep, several wildlife species of special management concern are known to occur in this region. These species are the gilded northern flicker (*Colaptes auratus chrysoides*), Virginia's warbler (*Vermivora virginiae*), hepatic tanager (*Piranga flava*), gray vireo (*Vireo vicinior*), Bendire's thrasher (*Toxostoma bendirei*), California grey headed junco (*Junco hyemalis caniceps*), and the Kingston Mountain chipmunk (*Tamias panamintinus acrus*). The gilded northern flicker is listed by the State of California as endangered. It has been observed on top of Clark Mountain, several miles away from the course in different habitat, and should not be affected by Barstow-to-Vegas race activities. The Kingston Mountain chipmunk has a montane distribution and should be similarly unaffected by event activities. Remaining wildlife species listed above are more widely distributed in the eastern Mojave Desert and do not have any legal status as sensitive species. No other wildlife species listed by the State or Federal government as threatened or endangered are known to occur in the area other than the desert tortoise which is discussed below.

The primary habitat type of the Nevada portion of the course is a creosote bush- white bursage assemblage similar to the California communities (Analysis from the 1990 Environmental Assessment CA-060-EA0-01).

**Desert Tortoise:** The desert tortoise (*Gopherus agassizi*) was State listed as "threatened" in California on June 22, 1989, and Federally-listed as "threatened" on April 2, 1990. The desert tortoise receives legal protection afforded under both the California Endangered Species Act and the Federal Endangered Species Act of 1973, as amended.

Prior to the desert tortoise being either State or Federally-listed, the BLM had initiated efforts to protect the species. In November of 1988, the BLM Director issued a document titled "Desert Tortoise Habitat Management on the Public Lands: a Rangewide Plan". This Rangewide Plan directed BLM District Managers to assign tortoise habitat areas into three Habitat Categories. On February 22, 1989, the California Desert District Manager assigned categories on an interim basis within the California Desert District.

Estimated miles of race course crossing desert tortoise Category I, II, and III habitats.					
	Tortoise Habitat Category			Non category	Total
	I	II	III		
# of miles:	45	35	35	55	170

Desert tortoise population densities have also been based on transect data obtained during the California Desert Plan Program, transects obtained for the BLM under contract in Nevada (Burge 1989), and by BLM staff in the Barstow and Needles Resource Areas in 1989.

In Nevada, approximately seven miles of the course in Category 2 desert tortoise habitat, which has moderate to high densities of tortoise. Approximately 35 miles of the course is Category 3 desert tortoise habitat, which has either low or low to moderate densities of tortoise (Analysis from the 1990 Environmental Assessment CA-060-EA0-01).



**Soil:** Soils along the course routes occupy two relatively distinct physiographic areas: (1) uplands consisting of old terraces, alluvial fans, and low desert foothills, and (2) mountains and lowlands consisting of alluvial flood plains, terraces, fans, and basin rims. These soil types are moderately to highly susceptible to erosion and compaction. Disturbances that cause the soil to breakdown or become compacted may cause erosion and the release of fine materials that are susceptible to wind erosion.

Current conditions along the race corridor are variable. Some areas in washes are mostly repaired through normal water flow patterns. Some roads used are in acceptable condition, due in part to repair by natural processes and road maintenance activities. However, the majority of the course route through non-road areas of the desert remains rutted, contains “whoop-de-doo” or is deeply “washboarded”, and exhibits powder-like surface soils where desert pavement has been removed and soil consistency disturbed. Soil cover is reduced in many instances (Analysis from the 1990 Environmental Assessment CA-060-EA0-01).

**Water:** The area has no permanent surface water. Surface flow occurs only after intense rainfall periods, and it soon infiltrates the dry desert soils or evaporates. Some water reaches the playas, which become inundated for short periods of time.

**Air quality:** Portions of northeastern San Bernardino County are within the Federal Mojave Desert ozone nonattainment area and all of San Bernardino County is within the Federal San Bernardino County PM<sub>10</sub> Nonattainment Area. Under State standards, the San Bernardino County portion of the Planning Area is an ozone nonattainment area and the entire plan area is classified as nonattainment for PM<sub>10</sub>.

**Cultural Resources:** The Barstow-to-Vegas course passes through one recorded historic site situated on private property at the Silver Lake townsite (CA-Sbr-2922). However, there are no known cultural resources on the course. Three other recorded cultural resources are located on public lands adjacent to the course with other recorded sites located within one mile. In Nevada, cultural resource inventories have been conducted along the proposed course, which include surveys described in CR5-1198N, 184N, 1508N, 1509N, 247N, 268N, and 87N. No cultural resources were found during the course of these surveys. Based on data review in these survey documents, sufficient efforts have been taken to identify and evaluate significant cultural resources within the area of effect per 36 CFR Part 60 (Section 106 of the National Historic Preservation Act), (1990 Environmental Analysis CA-060-EA0-01).

**Wilderness:** The Barstow-to-Vegas course has utilized roads along the boundaries of several WSAs. In 1983, the course used routes within the Soda Mountains WSA that were the subject of a court inspection and were approved by the court. The route of the proposed action does not enter any WSAs, but routes that form boundaries of WSAs are proposed for use (1990 Environmental Analysis CA-060-EA0-01). With the passage of the California Desert Protection Act, the following wilderness areas form boundaries along the course: Hollow Hills, Kingston Range, Mesquite Mountains, and Stateline.



**Recreation:** Total membership in the AMA in 1996 was around 180,000 of which 27,000 resided in California. There are about 100 permitted competitive events of all kinds held each year in the CDCA involving on average about 25,000 participants. In the past only about five percent of the total number of yearly participants took part in the long distance point-to-point events.

The Barstow-to-Vegas race was one of four competitive vehicle corridors established in the CDCA Plan. These four particular events, the only OHV competitive events that took place outside OHV Open Areas, had involved approximately 1,300 participants on the average each year up to 1990. The Stoddard Valley-to-Johnson Valley event was run only in 1980. The Johnson Valley-to-Parker was last run in 1986 with 173 participants and has only been run five times since 1980. The Barstow-to-Vegas occurred under permit annually from 1983 to 1989 with 1,200 participants. The Parker 400 had been permitted by the BLM annually since 1972 and involved a total of 425 participants, 300 of which race (except in 1989 when the California loop was not run) on the California side (Analysis from the 1990 Environmental Assessment CA-060-EA0-01). Note that there have been no major long distance point-to-point competitive motorized events in the CDCA since 1989 including the annual B-to-V Motorcycle race.

**Socioeconomic:** Expenditures by participants and spectators involved with the Barstow-to-Vegas race had in the past contributed to the local economies of several communities along the race course, including Barstow and Baker in California, and Stateline (now known as Primm) in Nevada. This race had been a major fundraiser for the AMA's District 37, which used most of the proceeds to fund umbrella insurance policies that allowed small, affiliated clubs to run other races. The AMA considered this race to be important to the well being of its members and related organizations. There was a national, as well as international, participation and interest in this race. The effect of this race on local economics and on the well being of the motorcycle community was a major issue. The Barstow Chamber of Commerce's 1989 annual income based on retail sales taxes was \$278,231,000 (Analysis from the 1990 Environmental Assessment CA-060-EA0-01).

### 3.13.9 MOTOR VEHICLE ACCESS: ROUTES OF TRAVEL

Desert visitors who venture off of the major access routes that cross the NEMO planning area described in Section 3.9, generally spend some of the time on the network of maintained and unmaintained gravel and dirt roads, ways, trails, and navigable desert washes. There are many of these "routes of travel" in the California Desert Conservation Area.

"According to one study, the CDCA has 15,000 miles of paved and maintained roads, 21,000 miles of unmaintained dirt roads, and 7,000 miles of vehicle-accessible washes. However, these routes are not evenly distributed throughout the CDCA, and desert topography and vegetation do not (always) prevent, and sometimes encourage, cross-country travel of motor vehicles. Desert soils and vegetation retain the marks of this kind



of travel for many years, except in a few places where occasional rains, windstorms, and flashfloods erase them. Thus, one vehicle traveling cross-country can create a new route of travel. The proliferation of roads and trails in the CDCA has resulted in a serious problem in some areas and provides the most difficult management issue for the BLM and the public.

Many of the Desert's loveliest and most fragile resources can only be enjoyed by use of vehicle access routes, but these routes are quickly destroyed if vehicles travel everywhere. Most people who go to the desert revel in its spaciousness and the feeling of solitude and freedom it provides. However, growing numbers of vehicles and uncontrolled expansion of this network of roads and trails may damage this solitude, and heavy-handed regulations to control this traffic would certainly affect this sense of freedom.

The question of managing access to the desert is especially sensitive. Vehicle access is confused with the use of vehicles for play. Public comments make it clear that motorized-vehicle access and off-highway vehicle play need to be clearly separated and managed differently.

While the Bureau is responsible for vehicle use on public lands, much of the control of vehicle travel in the desert is the responsibility of the user, whether the goal is recreational or commercial. The Bureau of Land Management does not and will not have the funds or staff to oversee vehicle use throughout the desert at all times. Therefore, rules for vehicle use must be fair, understandable, easy to follow, and reasonable if they are to be publicly accepted. Only commitment by the public, the owners of these lands, will insure success of rules and guidelines"

*From California Desert Conservation Area Plan (1980, as amended)*

From 1973 to approval of the CDCA Plan in 1980, BLM managed access under the Interim Critical Management Program (ICMP). An integral part of that program was the release of a series of 22 maps covering the entire CDCA. These maps illustrated the ICMP designations and delineated a network of access routes compiled from existing maps, public input and field review, supplemented with aerial coverage completed by December 31, 1978.

With approval of the CDCA Plan, the new OHV area designations became effective, and the ICMP maps and designations became invalid. However, until implementation of the CDCA Plan Motorized-Vehicle Access Element, as amended, is complete, "existing" routes of travel as identified for the ICMP mapping developed for the CDCA Plan may be used in all MUC M and MUC L lands which are designated as "Limited" areas for motor-vehicle access. Routes closed under the ICMP guidelines are to remain closed. As implementation proceeds, inclusive of the route designation process associated with the NEMO planning effort, some route limitations may change. Inventory is based on the "existing" routes network, as updated consistent with page 80 of the CDCA Plan, as amended (March 1989), and which is further described in Section 2.10.



Average route density in the NEMO planning area is lower than regions of the CDCA that are closer to major metropolitan areas. In the southern third of the planning area, two major freeways, Route 66, SH 127 and US 95, carry well over 90% of the motor-vehicle traffic. Portions or all of routes covering approximately 8,560 miles are proposed for designation within the 350,000 acres of inventory area.

Driving for pleasure, recreational touring, and thoroughfare transportation generally occurs in two-wheel drive vehicles on paved or graded dirt roads, or routes that received a substantial amount of use. Many recreational pursuits may be accomplished in varying degrees with a two-wheel drive vehicle. However, activities in much of the planning area, including permitted activities, hunting, rockhounding, technical OHV driving, wilderness hiking, and backroads exploration may require four-wheel drive vehicles for access. Overall use on most of these routes is light, with a few exceptions, where specific destinations are involved. Special recreational events may also draw increased use on specific routes for short durations, primarily in the late fall through spring months. Regular maintenance of linear utilities and communication sites, mineral exploration and development, and other land uses also result in some use of these routes.

### **3.13.10 TECOPA LANDFILL PROPOSED MUC CHANGE**

**Biological:** Plant and wildlife habitat values have largely been lost at this site. The area is currently managed under MUC "L". Any proposals require 30 days for thorough environmental analysis and development of mitigation measures to protect adjacent plant and wildlife communities that might be impacted. Public lands activities are subject to MUC "L" guidelines which emphasize use of existing routes and minimizing surface disturbance.

**Cultural:** There are no identified cultural resources or Native American values within this area.

**Land Use:** The existing CDCA MUC L classification does not allow for the sale of public lands. This is not consistent with BLM policy, given the existing use of the site as a landfill, unless closure of the landfill is currently underway. Closure to State standards is not currently feasible by the operator and would not provide for the short-term solid-waste disposal needs of area residents.

### **3.13.11 SHOSHONE LANDFILL PROPOSED MUC CHANGE**

**Biological:** Plant and wildlife habitat values have largely been lost at this site. The AREA is currently managed under MUC "L". Any proposals require 30 days for thorough environmental analysis and development of mitigation measures to protect adjacent plant and wildlife communities that might be impacted. Public lands activities are subject to MUC L guidelines which emphasize use of existing routes and minimizing surface disturbance.



**Land Use:** The existing CDCA MUC "L" classification does not allow for the sale of public lands. This is not consistent with BLM policy, given the existing use of the site as a landfill, unless closure is underway. Closure to State standards is not currently feasibly by the operator and would not provide for the short-term solid-waste disposal needs of area residents.

### 3.13.12 WILD & SCENIC RIVERS

After completion of the 1980 CDCA Plan, regulations were published in 43 CFR 8350 (7 FR 173, Sept. 7, 1982) addressing designation of waters for the National Wild and Scenic Rivers Systems on public lands. The first step in this process is identifying what river(s) segment(s) are eligible for Wild and Scenic Rivers designation. In the NEMO planning area, two rivers, the Amargosa River and Cottonwood Creek, has been identified with four eligible segments. The process and the Amargosa River, including its three eligible segments, are further described in Appendix O and Cottonwood Creek and its eligible segment is further described in Appendix S.

---



## **This Page Intentionally Left Blank**



## 4.0 ENVIRONMENTAL CONSEQUENCES

### Organization of Analysis

The Analysis of Environmental Consequences is organized, first, by proposal, second by alternative, and third, by category of change or resource element which may be impacted. The proposals are presented in the following order:

1. Adopt standards for public land health and grazing management guidelines in the Planning Area;
2. Identify management actions to recover threatened and endangered (T&E) species:
  - a. desert tortoise;
  - b. Amargosa vole, three listed riparian obligate birds; and
  - c. three listed plants.
3. Identify management actions to promote the conservation of several BLM-designated sensitive bat species
4. Make Multiple-use Class (MUC) decisions for lands released from wilderness consideration and consider Greenwater Canyon Cultural ACEC for deletion based on changes made by the California Desert Protection Act (CDPA);
5. Adopt a off-highway vehicle (OHV) strategy for motorized competitive speed events outside of open areas that includes addressing the Barstow-to-Vegas Race Course;
6. Consider MUC changes to facilitate disposal of existing landfills on public lands in the Planning Area; and
7. Identify potentially eligible rivers on public lands for suitability for inclusion in the National Wild and Scenic Rivers System. This subject is discussed along with watershed, riparian and T&E issues and may be found in the section on the Amargosa vole.

The major categories of change or resource elements to undergo a proposal-by-proposal analysis are listed and analyzed in the order presented below:

Impacts to Vegetation  
Impacts to Wildlife  
Impacts to Soils, Water and Air  
Impacts to Wild & Scenic Rivers  
Impacts to Wilderness  
Impacts to Cultural Resources  
Impacts to Native American Values  
Impacts to Wild Horses & Burros  
Impacts to Cattle Grazing  
Impacts to Recreation Resources and Activities  
Impacts to Minerals and Mining  
Impacts to Vehicle Access  
Impacts to Land Uses  
Impacts to Socioeconomic Values



A summary of impacts table is presented, at the end of Chapter 2, to identify which resource values and uses may be impacted and those values and uses that are anticipated to be negligibly impacted by the various alternatives. Critical elements of the environment are asterisked in the table. For values and uses negligibly affected, the existing CDCA Plan analysis is considered adequate. The subsequent analysis in this chapter focuses on values and uses that are potentially affected.

Five animal and three plant species in the Planning Area have been federally-listed as threatened or endangered, had critical habitat designated within the Planning Area since the CDCA Plan was developed, and/or had a recovery plan developed by USFWS. ACECs have been proposed to implement recovery strategies in the critical and other important habitat of these threatened or endangered biological resources (amendments #2 desert tortoise, #5 Amargosa vole, and #6 T&E plants). For the purposes of the following three analyses, impacts are judged to be significantly negative for threatened and endangered (T&E) species if they potentially compromise efforts to recover or maintain the species. Significantly positive impacts are those that promote or enhance the likelihood of recovery in substantial ways.

Impacts for each amendment/proposal are organized so that Alternative 1 “No Action” is discussed first. When there are multiple alternatives, alternative 2 and any other alternatives are arranged in descending order of relative conservation and increasing relative access and/or consumptive and renewable uses emphasis. The agency preferred alternative is identified as such and may be one of the previous alternatives or a combination of alternative actions. The preferred alternative may change as a result of other agency and public review.

Cumulative impacts are discussed briefly under alternatives within affected resource topics (how does this particular alternative contribute to cumulative effects); and they are discussed taken in combination with other past, present, and reasonably foreseeable actions in an analysis at the end of the chapter.

The land tenure (public land ownership pattern) changes proposed under specific alternatives in the NEMO planning effort are considered to have negligible impacts. Therefore land tenure issues within the Planning Area are addressed in their totality, including actions proposed in the NEMO planning effort and those resulting from other past, present and reasonably foreseeable future actions (see appendix N). Impacts are addressed under the cumulative analysis section.



## 4.1 STANDARDS AND GUIDELINES

Standards describe components of healthy ecosystems, and standards would not cause direct impacts in and of themselves. Standards provide a tool for assessing needs to effectively manage resources and uses. This information may indirectly result in impacts to resources and uses to respond to identified needs. The anticipated impacts discussed for National fallback standards (Alternative 1 No Action) are limited to those related to livestock grazing within allotments. Impacts for regional standards apply to all resources and uses on all public lands; however, impacts from regional guidelines are still limited to livestock grazing since only grazing guidelines have been proposed. Should the BLM develop guidelines for other activities, positive and negative indirect impacts to related resources and uses would be expected. The specific nature of the impacts would be evaluated and reviewed when these specific guidelines are proposed.

### 4.1.1 ALTERNATIVE 1 (NO ACTION) - Standards and Guidelines

#### Impacts to Vegetation

**General Vegetation:** Vegetation within grazing allotments has been affected by implementation of the four National fallback standards. Implementation of the standards has or may result in changes in seasons of use, non-use periods, rotational grazing, manipulation of herds, waters or other range improvements and fencing of sensitive areas where problems are identified. Small portions of Last Chance and South Oasis, two (11%) of the 18 allotments in the Planning Area do not meet the riparian or wetland national fallback standards. There are approximately 200 acres not meeting the standard, and of the 200 acres, 10 acres are in the South Oasis Allotment and 190 acres are in the Last Chance Allotment.

Under this alternative, long-term improvement is expected in the form of an extended period of growth for perennial forage species in response to continued achievement of the native species standard through the current implementation of grazing management practices. The period for plants to recover from cattle consumption is expected to increase. Biomass and vigor would increase for forage plants when the standards are achieved. This increase would result in a corresponding short-term decrease in biomass, seed production, and seedling establishment for those species not currently consumed by cattle. Plant volume for forage species is expected to increase in Creosote bush/white bursage, Creosote bush, and Mojave yucca series. The increase in volume would most likely increase canopy cover. There would be an increase in litter for the series receiving greater rainfall. Over the long-term all perennial plants adjacent to range improvements would increase in volume and vigor.

Substantial growth of plant series or communities is anticipated for those communities that have not reached their potential. Some increase in vegetative diversity for all communities is expected. However, significant increases in diversity are expected in Creosote bush-white bursage and Mojave yucca series. Where communities have the potential, tree and shrub structure is expected to increase and development of trees and



shrubs for appropriate age-class distribution is expected, as well. In the long-term, plant series will reflect achievement of later seral stages. This shift in plant communities would reflect a greater diversity of plants and animals.

Recruitment of perennial species is expected when weather conditions permit. Fire frequency is not expected to change except for prescribed burns utilized to increase perennial species or to improve habitat for special status species.

Short-term impacts would result from construction activities (i.e., small fences, troughs, pipes, storage tanks, corrals, and wells) for spring development or protection of riparian vegetation that increase soil disturbance and noxious weeds at or near the site.

**Special Status Plants:** Populations of special status plants will benefit similarly to other plants as described for general vegetation. Improvements in conditions that increase plant community diversity will also generally be beneficial to special status plants. The grazing guidelines specifically require the conservation of special status plants. If impacts on a specific special status plants species are identified, special management actions (e.g., grazing exclosure) may be required.

**Biological Soil Crusts:** It is thought that the low to mid-elevation arid ecosystems in the west developed with low levels of surface disturbance. Crust response to disturbance is highly variable. Biological soil crusts consist of cyanobacteria, green algae, lichens, mosses, microfungi, and other bacteria. Cyanobacterial and microfungal filaments weave throughout the top few millimeters of soil, gluing loose soil particles together and forming a matrix which stabilizes and protects soil surfaces from erosive forces (Cameron 1966; Friedmann and Galun 1974; Friedmann and Ocampo-Paus 1976; Belnap and Gardner 1993). Biological soil crusts reduce wind and water erosion, fix atmospheric nitrogen, and contribute to the soil organic matter, and provide germination sites for vascular plants (Eldridge and Greene 1994). The less it rains the slower the recovery of biological soil crusts. In hot deserts like the Mojave, it can take decades before biotic soils begin to recover. Biological crusts on sandy soils are less susceptible to disturbance when moist or wet. Clay soils are less susceptible to disturbance when crusts are dry.

Crusts may be disturbed by hooves of grazing animals. The crust response to these disturbances is variable depending on soil moisture and depth of hoof action. These allotments have been grazed for over one hundred years, and it is likely that continued light grazing would not make any appreciable additional changes in the biological crust species diversity. Site specific impacts to biological soil crusts may occur. When impacted sites are identified appropriate management action will be taken to protect impacted sites.

**Riparian/Wetland:** Managing livestock grazing to prevent overuse and to maintain or enhance the condition of riparian-wetland areas is often very challenging. Livestock impacts riparian vegetation both through direct consumption of plant material and trampling. The latter affects vegetation by compacting soil, resulting in reduced infiltration, percolation, root growth, and plant production (Clary 1995; Bryant et al. 1972).



Riparian vegetation degraded by overgrazing generally recovers within a decade once grazing pressure is removed (e.g., Platts and Nelson 1985; Chaney et al. 1993; Nelson et al. 1994). As long as gullying has not lowered the water table, riparian and meadow plants will regrow in a few years if not consumed (Odion et al. 1990). Although complete rest from livestock grazing is one management option for improving riparian areas, other grazing strategies can also result in riparian area improvement (Clary and Webster 1989; Elmore and Kauffman 1994). These include the use of riparian pastures, spring grazing, and attention to stubble height guidelines (with respect to the latter, see also Hall and Bryant 1995).

Under the National fallback standards, riparian species at certain spring sources within the Last Chance and South Oasis Allotments are expected to improve toward meeting and/or maintaining proper functioning conditions. Inside of allotments throughout the Planning Area where standards are currently being met in riparian areas, there would continue to be a reduction in the occurrence of tamarisk in riparian/wetland areas. The structure of trees and shrubs in riparian zones would increase. The width of riparian zones following the area of moisture would increase and vegetative cover from herbaceous plants, shrubs, and trees would increase. The number of age-classes for plants will increase over the long-term. As plant conditions improve, the diversity of plants and animals would increase. There would be a reduction in non-riparian species in potential wet zones.

Short-term impacts would result from construction activities (i.e., small fences, troughs, pipes, storage tanks, corrals, and wells) for spring development or protection of riparian vegetation that increase soil disturbance and noxious weeds at or near the site. Trends and conditions for riparian/wetland areas outside of allotments would continue to be addressed on a case-by-case basis. Many of the desert spring riparian areas within the NEMO Planning Area have been rated as non-functional or functioning-at-risk (Refer to Appendix J), primarily resulting from water diversion, weed establishment, vehicle use, mining, burro use or livestock grazing. Many riparian riverine segments have similarly been rated as functioning-at-risk due to upstream water use, groundwater overdraft and/or exotic plant (saltcedar or *Tamarix ramosissima*) establishment.

**Noxious Weeds:** Inside of allotments, there would be a substantial decrease in specific noxious weeds that respond to management techniques. Tamarisk would be reduced in riparian and wetland areas throughout the Planning Area. Reduction of noxious weeds by increased competition from native plants would move plant series to later seral stages. As native plant species increase, plant and animal species diversity would increase.

Short-term impacts would result from construction activities (i.e., small fences, troughs, pipes, storage tanks, corrals, and wells) for range improvements may increase noxious weeds at or near the site.

Trends and conditions for noxious weeds outside of allotments would continue to be managed consistent with the Vegetation Element of the CDCA Plan goals, MUC



guidelines, bureau-wide policies for the protection of riparian areas and control of exotic invasive species and other current policies.

### **Impacts to Wildlife**

The National fallback standards and Guidelines for Grazing Management promote the ecological function and processes necessary to maintain and improve special status species habitats on public lands. Since species are considered in meeting rangeland health standards, livestock grazing practices are designed to promote the conservation and recovery of listed species.

Since native animals, especially insects have evolved with native plant communities, reductions in noxious weeds, such as tamarisk in riparian habitat, and prevention of the introduction and spread of new noxious weeds will aid in increasing or maintaining animal diversity and abundance.

### **Impacts to Soil, Water and Air Resources**

**Soil:** Erosion rates will continue to decrease for soils in allotments that do not meet standards when corrective actions are taken. These changes occur due to modified grazing practices. Some areas will continue to have unavoidable impacts, such as major watering areas and other range improvements.

**Water:** Implementing the National fallback standards and guidelines would enhance and strengthen present direction over grazing activities occurring in the planning area. This change in direction would contribute to minor improvement of water quality from natural sources. Results from recent rangeland health assessments found that resource conditions meet the standards in most grazing allotments. Development of prescribed water (water troughs, pipe, and storage tanks) improvements would enhance current conditions by improving cattle distribution.

There would be improvement in hydrologic function resulting in improved water quality. As uplands and riparian improve, peak runoff and overland flow would be reduced and increased riparian vegetation would protect and stabilize adjacent soils. There would be an increase in water infiltration through most soils and a decrease in sedimentation.

**Air:** Fugitive dust emissions occur due to the soil disturbance as a result of the trampling action of the livestock and from wind erosion on disturbed surfaces when soil moisture levels are low. Small reductions in particulate (PM<sub>10</sub>) emissions could result from better vegetative cover and reduced wind erosion within grazing allotments that are not meeting standards when corrective actions are taken. Emission rates from areas outside grazing allotments would continue at current rates consistent with current State Implementation Plans for areas of nonconformity. Hydrocarbon and combustion emissions from vehicle activity and grazing operations and hydrocarbon (VOC) emissions from ruminant animals would continue at the current low levels in grazing allotments. No significant off-site impacts are anticipated. The proposed plan doesn't exceed the de minimus emission



levels, is addressed in the State Implementation Plans and is exempt from conformity determination (40 CFR Part 93.153 (iii )) which exempts continuing and recurring activities where activities will be similar in scope and operation to activities currently being conducted. As a result no further conformity analysis or determination is necessary.

### **Impacts to Wilderness**

Managing ecosystem health in accordance with National fallback standards, which pertain to soils, riparian and wetland areas, stream function, and native species, and managing grazing activities in accordance with the fallback guidelines will benefit wilderness resources to the degree that natural conditions are preserved. It is anticipated that managing ecosystem health and grazing activities accordingly will have no adverse impacts to wilderness. Site-specific projects to implement the fallback standards and guidelines will require separate environmental review, including a “minimum tool analysis” which specifies the manner in which projects are to be completed. Projects not conforming to provisions of the Wilderness Act of 1964, the California Desert Protection Act of 1994, and approved wilderness management plans will not be allowed.

### **Impacts to Cultural and Native American Values**

In areas already meeting the four identified indicators under National fallback standards no direct impacts to cultural resources or Native American values would be expected. Maintenance of stream channels and healthy vegetation cover to minimize erosion, compaction, reduction of protective ground cover and other conditions as well as development of springs and seeps can adversely affect cultural resources indirectly. Locating grazing facilities away from riparian-wetland areas whenever they conflict with achieving or maintaining riparian-wetland function has the potential to affect associated cultural resources. Streams and other natural water sources tended to be foci of prehistoric habitation and therefore may contain higher densities of sites that are scientifically important and of concern to Native Americans. Specific actions that may be used to implement the standards, such as ripping, erosion control, removal of non-native plant species, etc. may impact cultural resources and/or Native American values.<sup>1</sup>

Ground disturbing activities would require site specific cultural analysis, which may include survey, recording of sites, identified, determinations of eligibility of sites that will be impacted. Native American values impacts will be analyzed. Mitigation measures will be identified and implemented, if necessary. Avoidance of all sites is preferred.<sup>2</sup>

---

<sup>1</sup> Inventory data for most of the NEMO area is minimal. The only significant sample inventory available is that done in the 1970s for the California Desert Plan, which constituted a 1% to 2% stratified random sample, an extremely low sample for use in making management decisions. An additional sample inventory was conducted recently for a large portion of the Planning Area in the vicinity of Fort Irwin as a part of the analysis for expansion alternatives. For some portions of the NEMO area archaeological site data is little more than anecdotal. This is true for information on Native American traditional use areas as well.

<sup>2</sup> All potentially impacting activities used to implement public land health standards would be subject to review under Section 106 of the National Historic Preservation Act and requirements to consult with Native Americans under EO for government-to-government relationships, existing protocol agreements with tribes, and other relevant legislation. This review would involve identification of cultural resources or Native American concerns, assessment of significance or



Decisions to mitigate impacts by data recovery instead of avoidance and consequent removal of cultural resources from their context constitutes a residual impact in that rarely is 100% of data collected. Mitigation by data recovery results in a steady loss of a finite resource from its original location, with consequent reduction in interpretive opportunities and the public's ability to view such resources in their natural context. Data recovery may negatively impact traditional Native American values that cannot be mitigated.

### **Impacts to Wild Horses and Burros**

The standards for public land health identify biological and physical parameters as indicators assessing the health, productivity and diversity of habitats. Impacts to wild horses and burros would be common to all alternatives for standards.

Where rangelands are meeting standards, wild horse and burro numbers are in balance with a high level of sustained and reliable forage production. Where it is found that one or more of the standards have not been met due to wild horses and burro impacts, appropriate actions would need to be taken. These actions may include, but are not limited to, removal and placement of wild horses and burros into the National Wild Horse and Burro Adoption Program, fencing, and/or providing additional improvements such as water sources on public lands.

The guidelines for grazing management provide a basis for implementing specific management strategies and prescriptions to meet standards within grazing allotments. Several livestock allotments overlap Wild Horse and Burro HMAs. The guidelines create thresholds of cattle grazing use, which require livestock to be removed from an area when they are reached. Wild horses and burros cannot be similarly moved or restricted unless gathered, which is a time-consuming and complicated process. Despite identification of use problems, these animals may remain or move into an area, contribute to condition decline in these ranges, and ultimately lead to failure to attain standard(s). The CDCA Plan calculated the carrying capacity for the perennial allotments and appropriated Animal Unit Months per animal species (livestock, wildlife, wild horses and burros). It established Appropriate Management Levels for wild horses and burros, which if maintained within 20% of this number, should not exceed the thresholds on grazing or wildlife. If wild horse and burro impacts are found to be a causative factor in failing to meet one or more standards, wild horse and burro gathers are necessitated and the BLM may need to adjust the AML downward.

Impacts to wild horses and burros could result if it is determined that range improvements to promote sustainable livestock management are needed. Negative impacts could result if it is determined that the appropriate action is to construct fence(s) to allow for improved livestock management, which might impact the free-roaming nature of wild horses and burros. Positive impacts could occur if it is determined that the appropriate

---

eligibility for listing in the National Register of Historic Places, impacts to Native American traditional values, and determination of the need for avoidance, mitigation, or other measures to protect or retrieve the associated values.



action is to develop water sources within the HMA, which benefit both livestock and wild horses and burros.

The indirect impacts of range improvement projects for livestock management would be assessed during required site-specific analysis. Mitigation for these impacts would be developed at that time, if necessary. For example, if a spring water source utilized by livestock and wild horse and burros is fenced for Proper Functioning Condition reasons, an alternative water supply may need to be provided elsewhere for livestock, wild horses and burros (i.e., piping water from source, creating artificial waters, etc.).

### **Impacts to Cattle Grazing (and Allotments)**

Under this alternative, thirteen (72%) of the 18 grazing allotments (976,060 acres) in the Planning Area have been assessed for rangeland health conditions. (See Table 3-2) It is estimated that the National fallback standards have been met on 16 of the 18 allotments. The fundamentals of rangeland health have been secured for 925,355 acres (95%) of the Planning Area. The South Oasis Allotment did not meet the riparian/wetland standard due to tamarisk invasion, not from cattle impacts. The Last Chance Allotment did not meet the riparian/wetland standard due to cattle trampling vegetation at spring sources. The remaining five allotment will be assessed in the next 12 months and any resource conditions found to not meet the standards would be corrected.

No impacts to grazing management are expected when treating tamarisk infestation in springs for both allotments. There are limited numbers of springs and small populations of tamarisk in South Oasis Allotment that would be spot-treated. Last Chance Allotment is currently not used and short-term improvement of riparian/wetland conditions would continue until resumption of grazing use.

In this alternative, grazing use is expected to continue with a combined strategy of allotment management plans, grazing regulations, activity plans, and mitigation measures specified in the current biological opinions. A few minor range improvements would be necessary to maintain current rangeland health and resource objectives. There may be temporary reductions or shifts in grazing activities in small areas for a limited period to restore soil and vegetative conditions. These options often require the lessee to herd cattle, construct range improvements to control cattle movement, and convert to another class of livestock for better distribution. The lessee is responsible for control and management of livestock while restoration continues. If the remainder of the allotment is not available for grazing use during this period, the lessee would have to remove cattle until conditions are restored or range improvements are constructed.

### **Impacts to Recreation Resources and Activities**

Managing ecosystem health in accordance with National fallback standards and managing grazing activities in accordance with the guidelines for grazing management are not anticipated to appreciably affect opportunities for recreation. Non-motorized activities (i.e., hiking, rockhounding, and horseback riding) at low levels of occurrence



generally result in minor localized impacts to soils, riparian/wetland areas, streams, and/or native species. Although little to no data has been collected regarding such use or associated impacts within the NEMO Planning Area, it is believed that non-motorized recreational activities occur at low levels with negligible impacts. During open hunting season for game species, the Planning Area likely experiences increased levels of recreational use, but not to the degree that requirements to achieve National fallback standards would limit opportunities for hunting or other forms of non-motorized recreation.

Most non-motorized recreational pursuits in the California Desert require the use of motorized vehicles to facilitate access. Under this alternative, impacts to recreation resources and activities could result from closures of access routes. Without vehicular access, the resource remains but the opportunity for use is reduced or eliminated. Significance of impact on the recreation activities in the Planning Area would depend entirely on the routes no longer available for use as a means of access to the public lands. Few, if any, vehicle routes are anticipated to be closed solely on the basis of the application of the fallback standards, thus little impact to recreation resources and activities are anticipated. However, the fallback standards may, on a case-by-case basis, affect management strategies, particularly related to routes in areas being assessed, since all routes fail to meet the standards for soils and hydrology. The standards may become considerations for more active reclamation and/or rehabilitation strategies on closed routes. There are no OHV open areas overlapping grazing allotments so effects to these areas should be negligible under this alternative.

### **Impacts to Minerals and Mining**

There would be no significant impacts to existing or future mining operations or exploratory activity. Current reclamation requirements meet or exceed the standards. Mining is a temporary use and after successful reclamation public land health standards would be achieved.

### **Impacts to Vehicle Access**

Under this alternative, route designation would occur, consistent with CDCA Plan guidance and 43 CFR 8340 et seq. Managing ecosystem health in accordance with National fallback standards will likely affect motorized-vehicle access to the same degree as managing a route network consistent with the route designation criteria in 43 CFR. In accordance with the criteria, routes and trails are to be located to minimize damage to soil, watershed, vegetation, or other resources of the public lands, and to minimize harassment of wildlife or significant disruption of wildlife habitats. These are the same resources addressed by standards and guidelines in managing ecosystem health and grazing activities, respectively. In applying the regulatory criteria, therefore, the parameters established to designate routes of travel could very well mimic the National fallback standards and guidelines for grazing management.



There is no change to the existing management. Opportunities for casual use motorized touring and OHV events could be negatively affected by route designation, but the impacts are not anticipated to be substantial. Due to the low relative density of routes in most of the Planning Area, few routes are likely to be identified for closure.

### **Impacts to Socioeconomic**

Implementation of the Fallback standards has resulted in some minimal indirect socioeconomic impacts. Increased coordination for the short-term with the BLM would directly affect all lessees. However, lessees with cattle operations would be affected over the long-term with minor changes to current grazing activities to meet standards. Changes in management would require additional costs for labor associated with movement and increased supervision of cattle, and over the long-term, increased costs associated with maintenance of additional range improvements. Costs associated with constructing new or replacement range improvements would have to be borne solely by the lessee or through cooperative efforts, costs could be split with the BLM, County, and other contributors to substantially or totally defray all costs. A lessee would incur increased costs for feeding or pasture if cattle are removed from a portion or all of the allotment to achieve standards. However, as rangeland health and forage improves and resource objectives are achieved, greater benefits from more flexibility in grazing operations would be realized for the long-term.

Increased public use of unique or riparian/wetland resources that have greatly improved with achievement of the standards may result in additional revenue to the community from increased public use or visitation of these resources.

## **4.1.2 Alternative 2 (Preferred) - Standards and Guidelines**

### **Impacts to Vegetation**

**General Vegetation:** Impacts associated adoption of the regional standards are the same as Alternative 1 (No Action). In addition these same benefits to vegetation identified in grazing allotments through the rangeland assessment process can be expected on all public lands.

**Special Status Species:** The effects of Alternative 2 are similar to Alternative 1. However, since the guidelines are stronger and the standards are more definitive in Alternative 2, greater benefits for special status plants can be expected. In addition these same benefits to special status species identified in grazing allotments through the rangeland assessment process can be expected on all public lands.

**Biological Soil Crusts:** Impacts are the same as Alternative 1. In addition these same benefits to biological soil crusts identified in grazing allotments through the rangeland assessment process can be expected on all public lands.



**Riparian/Wetland:** Impacts associated adoption of the regional standards are the same as Alternative 1. In addition these same benefits to riparian/wetlands identified in grazing allotments through the rangeland assessment process can be expected on all public lands.

**Noxious Weeds:** Impacts associated adoption of the regional standards are similar to Alternative 1. However, since the guidelines are stronger and the standards are more definitive in Alternative 2, greater benefits for plant communities can be expected. In addition these same benefits to plant communities identified in grazing allotments through the rangeland assessment process can be expected on all public lands.

### **Impacts to Wildlife**

The effects of Alternative 2 will be similar to those of Alternative 1. However, since the guidelines are stronger and the standards are more definitive in Alternative 2, greater benefits for wildlife communities can be expected. In addition these same benefits to wildlife identified in grazing allotments through the rangeland assessment process can be expected on all public lands.

### **Impacts to Soil, Water and Air Resources**

**Soil:** Impacts are the same as Alternative 1. In addition these same benefits to soil identified in grazing allotments through the rangeland assessment process can be expected on all public lands.

**Water:** The effects of Alternative 2 will be similar to those of Alternative 1. However, since the guidelines are stronger and more definitive in Alternative 2, greater benefits for water quality can be expected, which would apply to all public lands in the Planning Area. These Best Management Practices reduce sedimentation and increase infiltration rates. Both of these are desirable and are positive steps toward solution of the impaired watershed classification on many of the watersheds represented by the NEMO Planning Area.

**Air:** The effects of Alternative 2 will be similar to those of Alternative 1. However, since the guidelines are stronger and more definitive in Alternative 2, greater benefits for air quality can be expected, particularly in areas not covered by State Implementation Plans, which would apply to all public lands in the Planning Area.

### **Impacts to Wilderness**

Impacts are the same as Alternative 1. In addition these same benefits to wilderness identified in grazing allotments through the rangeland assessment process can be expected in all wilderness areas.



### **Impacts to Cultural and Native American Values**

Impacts are the same as Alternative 1: Because this alternative covers all public lands and not just rangelands, all impacts, both beneficial and adverse, would be spread over a wider area.

### **Impacts to Wild Horses and Burros**

Impacts are the same as Alternative 1. Because this alternative covers all public lands and not just rangelands, all impacts, both beneficial and adverse, would be spread over a wider area.

### **Impacts to Cattle Grazing (and Allotments)**

Impacts to cattle grazing under this alternative are similar to Alternative 1. Standards will be applied throughout the Planning Area. Although attainment of Standards in grazing allotments would have a greater priority, improvement in resource conditions are expected to be shared with areas needing improvement on all public lands.

### **Impacts to Recreation Resources and Activities**

Managing ecosystem health in accordance with Regional standards and managing grazing activities in accordance with the specified regional guidelines would result in the same effects as discussed under Alternative 1 relative to National fallback standards and guidelines for grazing management, except: over the long-term, adoption of this alternative may have greater impacts to OHV areas and recreational vehicle touring outside of existing grazing allotments. Some increased use on dry lakebeds, washes, and trail routes, anticipated in the future as a result of population growth in surrounding communities, could have an adverse effect on soil and air quality, native species, and to a lesser extent, riparian/wetland and stream function.

Mitigation measures which restrict vehicular access may result in adverse impacts to recreation depending on the specific activity pursued and/or the specific location at which such restrictions are imposed. It would have a correspondingly positive impact on non-motorized recreation activities through the enhancement of a more natural environment and trail system such as increased opportunities for wildlife viewing. Overall these impacts are not anticipated to be significant in scope or scale, based on implementation of regional standards for public land health. This is due to the low density of the existing route network in the Planning Area.

### **Impacts to Minerals and Mining**

Impacts are the same as Alternative 1.



### **Impacts to Vehicle Access**

Impacts are similar to Alternative 1: The density of routes and trails brought about through route designation may be lower in MUC "L" under this alternative based on standards for public land health. This will result in somewhat less access, and may have a positive impact on non-motorized recreation activities through the enhancement of naturalness and non-motorized trails. There is one OHV open area, Dumont Dunes, that would be subject to standards for public land health. No guidelines for OHV areas have been developed as of yet, but additional parameters on a site-specific basis may be considered.

### **Impacts to Socioeconomic**

Impacts are similar to Alternative 1, except that some individuals or companies with leases, permits and plans for various land uses with the BLM other than grazing leases may be negatively financially affected on a short-term or long-term basis by implementation of management standards on public lands. For most permittees these standards are not a substantial deviation from existing policies, and impacts are anticipated to be minor. Standards do provide a better basis for enforcement of those policies with more explicit criteria for attainment of them.

Impacts to the general public and surrounding communities within the NEMO Economic Area are indirect and are generally minor, both locally and regionally. In the long-term public lands that meet standards are socioeconomic benefits both for local communities and for regional tourism throughout the entire Planning Area.



## 4.2 THREATENED AND ENDANGERED SPECIES

### CONSERVATION: DESERT TORTOISE CONSERVATION AND RECOVERY

This amendment was developed to strengthen the conservation strategy on BLM-managed public lands in California with regard to managing desert tortoise habitat. Alternatives were analyzed with the U.S. Fish and Wildlife Service's 1994 *Recovery Plan for Desert Tortoise (Mojave Population)* recommendations in mind, and included consideration for recovery strategies that are being pursued on adjacent jurisdictions.

In addition, the Desert Tortoise Recovery Plan made several specific management recommendations relative to the compatibility of other uses within the areas proposed for management and recovery of desert tortoise. Those recommendations that are consistent with current management are adopted and considered a part of all alternatives for the purposes of impacts analysis. For Recovery Plan recommendations that are inconsistent with current management direction, a reasonable range of alternatives is analyzed. (Refer to Chapter 7, Figure 6a-6e for a visual representation of identified geographical areas under each alternative)

#### 4.2.1 ALTERNATIVE 1 (No Action) - Desert Tortoise

##### Impacts to Vegetation

**General Vegetation:** Existing impacts to vegetation are generally low in tortoise habitat within the NEMO Planning Area, based on rangeland assessments conducted over the past year and a half. Under this alternative the existing impacts to general vegetation and plant communities would not change. On cattle grazing allotments and wild horse and burro management areas, there would be no changes in management systems, stocking rates, season of use or elimination of grazing except as might occur in response to monitoring or rangeland evaluations or in application of requirements in the existing biological opinion on cattle grazing. Continued application of the fallback standards and guidelines on grazing allotments is expected to improve vegetation trend, particularly in areas currently not meeting standards. Continued application of measures in the desert tortoise rangewide policy, desert tortoise statewide policy, and various biological opinions could result in some increase in plant diversity, biomass, cover and seedling survival.

**Special Status Plants:** No known threatened, endangered or other special status plants have been recorded within critical desert tortoise habitat.

**Biological Soil Crusts:** It is thought that the low to mid-elevation arid ecosystems in the west developed with low levels of surface disturbance. Crust response to disturbance is highly variable. Cyanobacteria are the most resistant to disturbance, are highly mobile and can recolonize disturbed surfaces rapidly. Lichens vary in resistance based on type. Mosses have a high susceptibility to disturbance. Lichens and mosses are susceptible to



burial. Disturbance results in reduced lichen and moss cover by burial, and cyanobacteria may increase and replace the lichens and mosses decreasing the species diversity. Biological crusts on sandy soils are less susceptible to disturbance when moist or wet. Clay soils are less susceptible to disturbance when crusts are dry. Site specific impacts to biological soil crusts may occur. When impacted sites are identified appropriate management action will be taken to protect impacted sites.

**Riparian/Wetland:** There are no impacts to riparian or wetland areas associated with Alternative 1 for desert tortoise conservation and recovery.

**Noxious Weeds:** There are some positive impacts to the control of noxious weeds associated with Alternative 1 based on on-going efforts to control non-native invasive species on public lands. These efforts are not specifically associated with desert tortoise conservation and recovery, but do support Alternative 1 of standards and guidelines.

### **Impacts to Wildlife**

**General Wildlife:** Within tortoise habitat of the NEMO Planning Area, impacts to wildlife populations are generally low. Impacts from Interstate Highways (I-15 and I-40) and other major highways (e.g., Highway 95) can be expected to continue. Within tortoise habitat areas, no local or regional strategies have been identified for wildlife other than desert tortoise. Although positive benefits may be derived from the BLM-wide bighorn sheep strategy and upland gamebird strategy and existing ACEC plans covering small portions of tortoise habitat, most wildlife management efforts consist of minimizing the effects of conflicting activities and mitigating projects. There is no existing monitoring of wildlife in tortoise habitat areas except for desert tortoise.

**Special Status Animals:** All critical and Category I desert tortoise habitat is MUC "L" except for the western portion of Shadow Valley (38,753 ac.), a portion of northern Ivanpah Valley (5,929 ac.), and a portion of Piute-Fenner Valley (3,960 ac.). These latter three areas are MUC "M". All Category I habitat units in the NEMO Planning Area have utility corridors designated in the CDCA Plan, and in the coming years construction of new and maintenance of existing transmission lines, pipelines, and fiber-optic cables will continue in these corridors. Tortoise populations are suppressed along and fragmented by Interstate highways and other paved roads that border or cross all Category I habitat units in the Planning Area. Other important factors affecting tortoise populations in the NEMO Planning Area include raven predation on hatchling and juvenile tortoises and diseases (e.g., upper respiratory tract disease and several shell diseases). For a discussion of other activities and natural processes currently affecting tortoise populations, see *Current Desert Tortoise Management Situation in BLM-Administered Lands in Portion of Northern and Eastern Mojave Planning Area* (Foreman 1998).

The effects of these and other activities (e.g., disease, raven predation, fire, and introduction of alien plants) result in natural processes that are not functioning properly and are addressed in BLM's Rangewide Tortoise Management Strategy and BLM's California Statewide Tortoise Management Policy. These documents guide BLM's



tortoise management based on tortoise habitat categories (see Chapter 3). The CDCA Plan also provides multiple use classes with guidelines and elements addressing specific uses. This land management backdrop provides overall protection for resources, including the desert tortoise, in the NEMO Planning Area.

Under this alternative, most Federal actions that may affect the desert tortoise or any other future listed species, would receive review by USFWS through the consultation process on a case-by-case basis. Specific projects receive review by USFWS under the consultation procedures defined in the Endangered Species Act. USFWS provides a biological opinion that includes measures jointly developed by USFWS and BLM to limit the effects on tortoise populations and tortoise habitat. Some projects or activities on public lands are already covered by programmatic biological opinions - cattle grazing, small mining operations, small disturbances, and dual-sport motorcycle events - and would not require additional consultation on a case-by-case basis. Local predator (e.g., ravens) control activities may occur on a case-by-case basis after appropriate environmental documentation.

### **Impacts to Soil, Water and Air Resources**

**Soil:** Soils would not be affected by Alternative 1 for desert tortoise conservation and recovery except as identified in 4.1.1, implementation of fallback standards.

**Water:** Water quality and quantity would not be affected by Alternative 1 for desert tortoise conservation and recovery except as identified in 4.1.1, implementation of fallback standards.

**Air:** Air Quality would not be affected by Alternative 1 for desert tortoise conservation and recovery except as identified in 4.1.1, implementation of fallback standards.

The no action alternative does not exceed the de minimus emission levels, is addressed in the SIPs and is exempt from conformity determination {(40 CFR Part 93.153 (iii))} which exempts continuing and recurring activities where activities will be similar in scope and operation to activities currently being conducted. As a result no further conformity analysis or determination is necessary.

### **Impacts to Wilderness**

None of the actions specific to recovery of the desert tortoise as proposed in the NEMO Plan under this alternative will adversely affect wilderness resources. Site-specific projects to facilitate recovery of the desert tortoise will require separate environmental review, including a “minimum tool analysis” which specifies the manner in which projects are to be completed. Projects not conforming with provisions of the Wilderness Act of 1964, the California Desert Protection Act of 1994, and approved wilderness management plans will not be allowed.



### **Impacts to Cultural and Native American Values**

There would be no change from current management practices. Impacts to cultural resources could occur, particularly at known sites near water sources within areas that are subject to intensive use by wild horses, burros and cattle. Potential for impacts to cultural resources on lands zoned MUC "Moderate" will continue to be the same as under current management practices. Site-specific analysis would occur prior to ground disturbing activities, and any data recovery may result in additional impacts to cultural resources.

### **Impacts to Wild Horses and Burros**

Utilize existing CDCA Plan management and the existing East Mojave HMA Plan to manage an "AML" of 44 burros within desert tortoise habitat, including those within critical and Category I desert tortoise habitat. The management of wild burros would continue to integrate fallback standards and guidelines for grazing management within the Planning Area, consistent with Federal regulations for rangeland reform.

A Clark Mountain HMAP will be developed incorporating: standards and guidelines, consistent with Federal regulations for rangeland reform; implementation of maximum utilization levels on key forage species prescribed in Appendix E for desert tortoise habitat; habitat monitoring guidelines; population census; removals; the development of natural and artificial waters to relieve pressures of some critical waters and aid in the distribution of burros; erect permanent trap sites to aid in population control; and other range improvements required specifically to promote desert tortoise conservation and recovery (See Appendix E).

Under the current situation live trapping methods which include helicopter assisted removals or water trapping will be used to continue to remove wild burros from the eastern portion of the Clark Mountain Herd Area until their populations are eliminated in the eastern portion of the HMA. Continued removals will occur within the HMA until the overall AML is achieved. These removed burros will no longer add to the genetic diversity of the species, especially in those ranges, which are completely removed. Burros gathered in the trapping process may experience some stress. The helicopter removal related stress factors are in the form of the distance animals travel, condition of animals, terrain, physical barriers, weather and if roped, the process of being led into the holding pen. The water trapping method is the least stressful to the burro; the animal may become agitated when it can't get out of the trap and when they are being loaded on to the trailer.

Once the burros are transported to the Ridgecrest Wild Horse and Burro Holding Facility, they are vaccinated, wormed, freeze branded, tested for Equine Infectious Anemia and given any medical treatment needed prior to being placed up for adoption which typically takes four to six weeks. Burros removed from their natural environment adjust well to domestication. Burros are adopted for use as pack animals, riding, pulling carts or wagons, guard animals for livestock, and as pets. At the present time, the BLM's National Wild Horse and Burro Adoption Program is the only method available for



population control and disposition of excess wild horses and burros removed from the public lands.

Under current management there is a risk of inbreeding and reducing genetic diversity of the wild burro population when specific phenotypes or physical characteristics are selectively managed for, and when the adult population is less than 50 animals.<sup>34</sup> This impact can be mitigated by the periodic introduction of healthy animals from other herd areas with similar habitats to herds whose genetic diversity may be at risk. Tissue or blood samples can be analyzed to help determine if there is a need to introduce new animals.

Consultation with the U.S. Fish & Wildlife Service would occur, upon which additional terms for management prescriptions may be required which may impact wild burro herds and/or burro management. These prescriptions would be incorporated into the HMAP.

Managing wild burros under the fallback standards should achieve an ecological balance within the HMA. There may be impacts to wild horses and burros found to be causative in not achieving one or more of the standards. The nature of these impacts is beyond the scope of this plan and would be addressed in the Clark Mountain HMAP.

### **Impacts to Cattle Grazing (and Allotments)**

Under this alternative grazing use would continue through direction provided by the grazing regulations, CDCA Plan, allotment management plans (AMPs), monitoring, determinations, and biological opinions for grazing activities in desert tortoise habitat. The maximum average level of grazing use is prescribed in the CDCA Plan and there have been very few requests for grazing use above that level through temporary non-renewable authorizations. Allotment classification for ephemeral use has been infrequent, even for the Piute Valley Allotment, which is strictly classified for such use.

Livestock producers have been voluntarily reducing stocking rates for much of the 1990's. The eastern Mojave Desert has been dry and forage conditions have been poor. The biological opinion for grazing activities in desert tortoise habitat has restricted grazing use to some degree in several allotments. For example, grazing use of ephemeral forage cannot occur until there is 350 pounds per acre of ephemeral forage. The BO also directs grazing periods for certain allotments and the turning off of water sources while not used by cattle. Based on the status of the desert tortoise, assessment of standards and other changes on the ground, many of the AMPs written in the 1980's are being revised.

The 1998 Plan Amendment for Grazing Allotments allowed grazing use on Granite Mountain and Lanfair Valley Allotments to be voluntarily canceled by the lessee based on third-party buy-out provisions and have been terminated. This cancellation process amends the CDCA Plan by removing the designation of the allotments, their forage

---

<sup>34</sup>. Ian Robert Franklin, "Evolutionary change in Small Populations" Conservation Biology 1980



allocations, and cancellation of authorizations for range improvements. It is unknown whether this option will be exercised on other allotments, but it remains a potential opportunity, which could lead, to substantial decreases in the East Mojave over the long-term.

### **Impacts to Utilities**

The protection of the desert tortoise will not have a significant new impact on the existing corridors. There may be parameters on how utilities are developed within desert tortoise habitat based on the quality of the habitat and other factors that have been identified.

### **Impacts to Recreation Resources and Activities**

Recreational uses that adversely affect listed and sensitive species or other significant wildlife resources face modifications. Most recreational activities occurring in critical habitat are either casual use activities, or take place in conjunction with existing programmatic consultations with wildlife agencies that set parameter on uses.

Generally, actions under this alternative do not appreciably affect opportunities for recreation within the NEMO Planning Area, especially those which do not directly involve the use of motorized vehicles. However, without vehicular access, the recreational resource remains but the opportunity for use is reduced or eliminated consequent to designating specific routes of travel as ? limited? or ?closed.? To the degree that route designation process limits access or precludes motorized activities in certain areas within designated critical desert tortoise habitat, opportunities for recreation will be affected (See Chapter 7, Figures 4a-b-c for proposed route networks in critical habitat). On the other hand, management actions and route approvals may enhance natural areas for human enjoyment.

Currently, stopping, parking, and vehicle camping is allowed within 300 feet of centerline of routes of travel except in sensitive areas. Under this alternative stopping, parking and camping rules would be unchanged.

### **Impacts to Minerals and Mining**

There would be no change in tortoise compensation payments, or in the existing management. The mitigation for minerals and mining impacts will continue consistent with Category I Tortoise Habitat guidelines. The mitigating measures for mineral related operations would be unchanged. For no action, mitigation is based on case-by-case assessments in the environmental documents prepared for specific actions, except for small mining activities covered under the programmatic consultation (under ten acres). Mitigation is available in the 3809 regulations for prevention of unnecessary and undue degradation and from measures resulting from consultation with the U.S. Fish and Wildlife Service. In general, these consist of compensation for lost habitat, fencing, seasonal use restrictions, tortoise training programs, field contact representatives,



designated biologists for tortoise surveys, qualified biologists for handling tortoises, and speed limits for vehicles.

### **Impacts to Vehicle Access**

Under this alternative, route designation would occur, consistent with CDCA Plan guidance and 43 CFR 8340 et seq. Opportunities for casual use motorized touring and OHV events could be negatively affected by route designation, but the impacts are not anticipated to be substantial. Due to the density of routes in critical habitat, relatively few routes are identified for closure as compared with other areas of the CDCA that have undergone route designation. There are no MUC intensive (I) areas that would be affected.

## **4.2.2 ALTERNATIVE 2 - Desert Tortoise**

### **Impacts to Vegetation**

**General Vegetation:** Management under this alternative would have the greatest net positive affect on vegetation. Efforts to maintain and enhance habitat and rehabilitate disturbed areas, where feasible, would receive increased emphasis. These efforts would be consistent with regional standards, with BLM revegetation and rehabilitation standards, and occur in conjunction with fire rehabilitation, project-specific mitigation measures, and habitat monitoring activities.

Elimination of burros from the Clark Mountain HMA would result in increased above ground biomass, reproductive capability, and plant vigor. Increased numbers of immature plants would successfully be established, making more plant material available for litter. An upward trend in vegetation condition, representing a progression from one condition class to higher class (i.e., from mid-seral stage to late seral stage). Revegetation of trails and congregation areas would occur.

Similarly, where grazing is eliminated from the four proposed ACECs, plant composition would change. Biomass of cattle forage species (e.g., perennial grasses) would increase, possibly at the expense of non-forage species as the plant species community readjusts. Denuded and disturbed areas at and around troughs and corrals would restore naturally over time.

Measures in the desert tortoise strategy (Appendix A) together with the limit on new surface disturbance would reduce disturbances to the vegetation.

**Special Status Plants:** No known threatened, endangered or other special status plants have been recorded within critical desert tortoise habitat.

**Biological Soil Crusts:** Impacts to biological soil crust are the same as Alternative 1 except the cancellation of cattle grazing and the elimination of the Clark Mountain Herd



Management Area will further decrease the amount of disturbance to biological soil crusts.

**Riparian/Wetlands:** Impacts are similar to Alternative 1 except modest long-term benefits can be anticipated as a result of the closure of all washes.

**Noxious Weeds:** The Impacts are similar to Alternative 1. There may be some additional benefits from efforts to enhance habitat and rehabilitate surface disturbances including closed routes.

### **Impacts to Wildlife**

**General Wildlife:** Benefits to wildlife populations would occur primarily in the ACECs where burro and cattle grazing would be removed. Benefits of these two actions would reduce competition for forage, trampling of animal burrows, reduction in disturbed areas on trails and at watering sites. Various measures in the Desert Tortoise Conservation Strategy (Appendix A) together with route designation and decreased parking and camping distances off routes would reduce habitat loss. To the extent that the raven management strategy is effective in reducing raven populations in desert communities, raven depredations on lizard and bird populations, if any, would be reduced. Fencing of Interstate and other major highways would reduce mortality of populations of lizards, snakes, and small rodents along those highways.

**Special Status Animals:** This alternative would have the greatest benefit to the federally and State threatened desert tortoise. The four ACECs would encompass about 354,300 acres. Measures in the tortoise strategy (Appendix A) would reduce habitat disturbance and direct mortality of tortoises. For example, route designation in the ACECs would reduce the area of disturbance and limit the spread of noxious weeds. Reducing the parking and camping distance from 300 to 50 feet would limit habitat disturbance and reduce the risk of running over tortoises. The closure of all washes within DWMA's would decrease the likelihood of take through direct or indirect means and loss of some of the most important habitat in times of stress.

Removal of burros from the Shadow Valley HMA and cattle grazing from the ACECs would have a beneficial impact on desert tortoise by promoting burro and cattle forage species, many of which are also tortoise forage. A greater amount and variety of forage would be available for desert tortoise, thus improving nutrition and lowering susceptibility to upper respiratory tract and shell diseases. Cover providing protection from the elements and from predators would increase, resulting in reduced mortality. Over the long term, increased juvenile tortoise recruitment rates would aid in the recovery of the tortoise.

Although raven predation is not known to be unusually high in the NEMO Planning Area, implementation of a raven management program would potentially reduce raven predation on hatchling and juvenile tortoises and would aid tortoise recruitment. Fencing



of Interstate and other major highways would reduce animal roadkills that provide food for ravens; elimination of this food source would aid in controlling raven populations.

Tortoises are killed as they attempt to cross major highways. Fencing of Interstate and other major highways will reduce tortoise mortality. Elimination of this mortality factor will allow restoration of depleted tortoise populations adjacent to these corridors.

Increased emphasis on monitoring would allow more efficient responses to population declines and changes in age structure. No other special status animals would benefit appreciably.

### **Impacts to Soil, Water and Air Resources**

**Soil:** This alternative would result in less surface disturbance which should result in reduced erosion rates for those areas within the 354,300 acres of the Desert Wildlife Management Areas. This would include a six-fold decrease in the areas susceptible to soil compaction and damage from stopping, parking and camping, based on the proposed change from 300 feet to 50 feet.<sup>4</sup> Areas outside the DWMA's would continue the current condition and trend.

**Water:** Impacts would be similar to Alternative 1. Water quality and quantity would not be affected by adoption of Alternative 2 for desert tortoise conservation and recovery, except as identified in 4.1.2, implementation of regional standards for public land health.

**Air:** Impacts would be similar to Alternative 1. Air quality would not be affected by adoption of Alternative 2 for desert tortoise conservation and recovery, except as identified in 4.1.2, implementation of regional standards for public land health.

### **Impacts to Wilderness**

Impacts are the same as Alternative 1 except actions specific to recovery of the desert tortoise to eliminate cattle grazing and burro management in Shadow Valley ACEC under this alternative will result in beneficial impacts to wilderness values primarily north of the Boulder Corridor.

### **Impacts to Cultural and Native American Values**

Negative impacts to known and undiscovered cultural resources, in particular those associated with existing water resources, would decrease with the removal and relocation of wild horse and burro populations. Permanent retirement of the cattle grazing allotments in the proposed DWMA's would have a similar result. The generally reduced levels of activity that would be expected to occur within the DWMA's would be beneficial to known and undiscovered cultural resources and Native American values. Limiting surface disturbance would reduce impacts from some existing activities to an unknown number of cultural resources. There will be a beneficial impact to cultural resources within those lands changed from MUC M to L because any mining-related operation

---

<sup>4</sup> See page 4-85 of the 1982 plan amendments to the CDCA Plan DEIS.



other than Casual Use would require an approved Plan of Operations prior to conducting any surface-disturbing activity in these areas.

Site-specific management practices to implement recovery, such as fencing along major traffic corridors and route rehabilitation may impact prehistoric or historic archaeological resources. Site-specific analysis would occur prior to ground disturbing activities. Data recovery may result in additional impacts to cultural resources, due to the loss of the artifacts from their original location.

### **Impacts to Wild Horses and Burros**

This proposed action would eliminate the Clark Mountain designated herd management area. The AML and forage allocation for burros in Shadow Valley would be zero. Burros would be completely removed from the Shadow Valley ACEC for the conservation of the desert tortoise, and the eastern portion of Clark Mountains per the existing HMAP. All burro removal and adoption impacts would be the same as Alt 1.

### **Impacts to Cattle Grazing (and Allotments)**

This alternative affects six grazing allotments within the four ACECs in the two DWMAs proposed for conservation of the desert tortoise. Under this alternative Jean Lake, Kessler Springs, and the Piute Valley (ephemeral) Allotments will be terminated because they completely fall within the Ivanpah Valley and Piute-Fenner Valley DWMAs. Substantial portions of the Clark Mountain, Valley View and Valley Wells Allotments that overlap the DWMAs will be terminated and the forage allocations in the allotments will be reduced. The other allotments are not affected by the actions of this alternative and would be treated the same as the No Action Alternative. The overall impacts of this alternative would be the complete elimination of grazing on three of the six allotments with acreage in DWMAs, and a 75 percent anticipated loss of use on the other three allotments (refer to Table 4-1).

**Table 4-1 Impacts to Grazing Allotments from Alternative 2**

Allotments	Names of DWMA Unit	Acres in DWMA	Direct Loss of AUMs	Anticipated Loss of Use	AUMs Available
Clark Mtn.	North Ivanpah Valley	27,280	419 [28%]	419 [28%]	884
Jean Lake	Ivanpah Valley	9,806	300 [100%]	300 [100%]	0
Kessler Spgs.	Ivanpah Valley	13,760	481 [100%]	481 [100%]	0
Piute Valley	Piute-Fenner Valley	20,219	NA	NA	0
Valley View	Ivanpah Valley	11,245	289 [34%]	289 [34%]	560
Valley Wells	Shadow Valley	107,072	1,917 [44%]	4,272 [100%] <sup>5</sup>	0

<sup>5</sup> Because the DWMA covers the length and width of Shadow Valley, all but the most expensive options for fencing and water development are dramatically reduced and the entire Valley Wells allotment is considered no longer viable.



### **Impacts to Utilities**

Impacts would be similar to Alternative 1 except for major linear utilities in the corridors, which may be subject to additional mitigation and analysis to limit surface disturbance under the programmatic biological opinion. There are unlikely to be substantial parameters based on the cumulative disturbance limitations for the reasonably foreseeable future.

### **Impacts to Recreation Resources and Activities**

Under Alternative 2, new surface disturbances from all activities including authorized recreational activities will be limited. Generally, actions under this alternative do not appreciably affect opportunities for recreation within the NEMO Planning Area, especially those which do not directly involve the casual use of motorized vehicles. Application of the route designation criteria as proposed to conserve special status species and natural communities will result in minor impacts to vehicular access, and therefore, to recreation. Localized restrictions to vehicular access will occur, but the network of routes available for casual motorized use will continue to provide reasonable access throughout the Planning Area.

This means that some changes to the manner in which certain recreational activities are pursued will be required. For instance, vehicular access is currently allowed in all navigable washes. Upon application of the regulatory criteria, access in washes will no longer be permitted. This will probably have the greatest impact on hunters particularly during authorized game seasons. Those less able to walk will also be constrained by any limitation to access, but ample opportunity still exists for the recreational experience. Currently, stopping, parking, and vehicle camping is allowed within 300 feet of routes of travel. Limiting these activities to within 50 feet of a route centerline under Alternative 2 will affect opportunities for such activities. The rationale for changing the distance from 100 feet to 300 feet (CDCA Plan amendment, 1982) was to allow for Recreational Vehicle camping in a circle, not a line. This is not a major impact in the Planning Area given the low levels of group camping use.

For many areas, signs will be posted soliciting the cooperation of casual visitors. In some cases, fencing may be utilized to prevent unintentional impacts. In addition, interpretive signing and informational kiosks will promote visitor use of the various areas consistent with management objectives for on-site visitors.

### **Impacts to Minerals and Mining**

Under this alternative, 48,642 acres of land would be reclassified from MUC M to L. This is approximately fourteen percent (14%) of the area involved. Any mining related activity proposed for these areas, other than casual use, would require an approved Plan of Operations prior to conducting surface disturbing activities. Proposed ACEC management prescriptions would also restrict surface disturbing activities during the tortoise active season by limiting operations or requiring tortoise-proof fencing. These



measures are similar to existing mitigation strategies on MUC L lands and all mining over five acres. These impacts would affect mining activities of five acres or less in the current MUC M area by increasing permitting time and costs (See Appendix K for a discussion of the administration of Notices and Plans of operation).

The proposed ACEC management plan would establish a one- percent (1%) ceiling for cumulative surface disturbance, except for those related to Interstate and major highway improvements. Reclaimed lands would be credited as undisturbed lands. Cumulative disturbance in each of the four proposed ACECs since approval of the CDCA plan in 1981 is estimated to be less than one percent (1%). This limit on surface disturbance would have no effect on mining operations if the cumulative surface disturbance remains below one percent (1%). If the one percent (1%) threshold is reached, the ACEC management plan would require an amendment, or consultation with USFWS would be required and a non-jeopardy decision rendered before any new disturbance could be approved. There are unlikely to be substantial parameters based on the one-percent cumulative disturbance limitations for the reasonably foreseeable future.

Within the proposed Piute-Fenner DWMA, there are approximately 2,700 acres of land with high potential for discovery and development of an open-pit heap leach gold mining operation that would be subject to the one- percent threshold. Within the Ivanpah Valley unit nearly 5,000 acres of land contain moderate potential for development of known sodium chloride resources beneath Ivanpah Dry Lake which would not be substantially restricted by the one percent (1%) ceiling.

The current programmatic biological opinion for small mining allows BLM to process mining actions less than ten acres without further USFWS consultation. This alternative would allow BLM to process mining actions without further consultation with USFWS for operations up to 100 acres in size and could expedite the approval process for these operations if an EIS is not determined to be necessary.

### **Impacts to Vehicle Access**

Impacts to vehicle access are the same as Alternative 1 except for the designation of all washes as Closed and routes where specific criteria have been applied to meet desert tortoise DWMA goals and objectives (see appendix A). This would have low to moderate effect on technical four-wheel drive enthusiasts, hunters and those participating in mining exploratory activities, based on the low density of washes on the existing route network (1979 maps).

## **4.2.3 ALTERNATIVE 3 - Desert Tortoise**

### **Impacts to Vegetation**

**General Vegetation:** Beneficial impacts would be similar to Alternative 2 but somewhat less. The area covered under this alternative would be 29,110 acres less, and elimination of grazing would not occur except on one infrequently used ephemeral allotment.



However, new limitations on forage for spring cattle turn-out would result in increased above-ground biomass reproductive capability and plant vigor during this essential growing period. Burros would be removed from the Shadow Valley ACEC and critical habitat but not from the entire Clark Mountain HMA. The parking and camping restriction would be 100 feet compared to 50 feet in Alternative 2 resulting in increased potential for destruction of vegetation.

**Special Status Plants:** Impacts are the same as Alternative 2.

**Biological Soil Crusts:** Impacts are the same as Alternative 1 except the modification of the Clark Mountain HMA will further decrease the amount of disturbance to biological soil crusts. This will be somewhat offset by increased surface disturbance within the new boundaries of the modified HMA.

**Riparian/Wetland:** Impacts are the same as Alternative 1.

**Noxious Weeds:** Impacts are the same as Alternative 2.

### **Impacts to Wildlife**

**General Wildlife:** Beneficial impacts would be similar to those described for Alternative 2 but over a smaller ( by 29,110 acres) area and with fewer reductions in burro and cattle use (see the discussion on General Vegetation above.)

**Special Status Animals:** Beneficial impacts would be similar to those described for Alternative 2 but over a smaller area and with fewer reductions in burro and cattle use. (See the discussion on General Vegetation above.).

### **Impacts to Soil, Water and Air Resources**

**Soil:** Impacts are similar to but less beneficial than alternative 2. This alternative would result in less surface disturbance which should result in reduced erosion rates for those areas within the 325,190 acres in three ACECs within two DWMAs. This would include a three-fold decrease in the area susceptible to soil compaction and damage from stopping, parking and camping based on the proposed change from 300 feet to 100 feet. Areas outside DWMAs would continue the current condition and trend.

**Water:** Impacts are the same as Alternative 2.

**Air:** Impacts are the same as Alternative 2.

### **Impacts to Wilderness**

Impacts are similar to Alternative 2 except some grazing may still occur in wilderness areas but parameters on minimum forage requirements will still result in substantial benefits to the natural character of wilderness.



### **Impacts to Cultural and Native American Values**

Impacts would be similar to Alternative 2 with the exception of the identified positive benefits to known and undiscovered cultural resources and Native American values would not occur within the Northern Ivanpah Valley area and would not include decreased impacts associated with the elimination of cattle grazing. Positive impacts from changing MUC "M" to "L" will be essentially the same as Alternative 2 with 5,929 acres less changed from M to L so fewer known and undiscovered cultural resources will benefit.

### **Impacts to Wild Horses and Burros**

Impacts would be similar to Alternative 1, but the designation of the Clark Mountain HMA on the eastern portion of the Clark Mountain Herd Area outside of desert tortoise critical habitat would affect fewer animals and a viable HMA would remain in the Clark Mountain area. Impacts to wild burros in the western portion of the Herd Area (current Clark Mountain HMA) would be in the form of complete removal through live trapping methods. All burro removal and adoption impacts would be the same as Alternative 1.

### **Impacts to Cattle Grazing (and Allotments)**

This alternative affects five grazing allotments within the three ACECs in the two DWMAs proposed for conservation of the desert tortoise. Under this alternative Piute Valley Allotment will be terminated because it is ephemeral. Substantial portions of the Valley View, Jean Lake, Kessler Springs and Valley Wells Allotments which overlap the DWMAs will have minimum forage allocations (230 pounds air dry weight per acre) for spring grazing to occur. The other allotments are not affected by the actions of this alternative and would be treated the same as the No Action Alternative. The overall impacts of this alternative could be to preclude grazing from portions of the four allotments in some years and the complete elimination of grazing on the Piute Valley (grazed two years of the last twenty) allotment with acreage in DWMAs. The Clark Mountain allotment would not be affected.

The overall impacts of this alternative would likely be substantial changes to grazing on three allotments with acreage in DWMAs (refer to Appendix E for proposed stipulations) and the elimination of the Piute Valley allotment.

### **Impacts to Utilities**

The impacts are similar to Alternative 1. Utilities within the corridors are exempt from the acreage limitations for site-specific surface disturbance identified in the Desert Tortoise Conservation Strategy under this alternative. There are unlikely to be substantial parameters based on the cumulative surface disturbance limitations for the reasonably foreseeable future.



### **Impacts to Recreation Resources and Activities**

Impacts are similar to Alternative 2, but the reduction in stopping, parking and camping distance would be 100 feet rather than the 50 feet limitation in Alternative 2. This would lessen potential impacts on recreational visitors particularly those with large recreational vehicles.

### **Impacts to Minerals and Mining**

Impacts are similar to Alternative 2, except that 42,713 acres would be reclassified from MUC M to L rather than 48,642 acres. Cumulative disturbance would be the same as Alternative 2 (1%) as would the impacts. Consultation limits within the Piute-Fenner, Ivanpah and Shadow Valley ACECs would be 100 acres, and as with Alternative 2 this would expedite the approval process for operations up to that size provided an EIS is not determined to be necessary.

This alternative would also convert 42,695 acres of BLM Category I Habitat to Category III Habitat outside DWMA boundaries, which would result in fewer restrictions and less compensation for activities. In addition, mining activities under 100-acres in desert tortoise habitat would not require further consultation with USFWS.

### **Impacts to Vehicle Access**

Impacts would be similar to Alternative 2 except limitations on access to washes would be less than Alternative 2 since major washes could be designated Open or Limited and available for vehicular use consistent with the criteria (see Appendix A).

## **4.2.4 ALTERNATIVE 4 - Desert Tortoise**

### **Impacts to Vegetation**

**General Vegetation:** Beneficial impacts to maintain and enhance habitat and rehabilitate disturbed areas would be similar to Alternative 3 but over 114,060 acres less (i.e., deletion of Shadow Valley unit). As in Alternative 1, burros would not be removed from Shadow Valley or from the entire Clark Mountain HMA; impacts of burros on vegetation would remain. Impacts from cattle grazing would be the same as Alternative 1 except that grazing would be eliminated from one infrequently used ephemeral allotment.

**Special Status Plants:** Impacts are the same as Alternative 2.

**Biological Soil Crusts:** Impacts are the same as Alternative 1.

**Riparian/Wetland:** Impacts are the same as Alternative 1.

**Noxious Weeds:** Impacts are the same as Alternative 2.



### **Impacts to Wildlife**

**General Wildlife:** impacts are similar to Alternative 3 but over a smaller area and with continued effects of burro trailing and grazing in Shadow Valley. (See the discussion on General Vegetation above.)

**Special Status Animals:** Beneficial impacts to the desert tortoise would be similar to those described for Alternative 3 but over a smaller area and continued effects of burro trailing and grazing in Shadow Valley. (See the discussion on General Vegetation above.)

Non-lethal control of ravens (mitigation, sanitation, etc.) will help in the control and proliferation of ravens, but there is still the potential that some ravens will continue to be selective on juvenile tortoises. Limiting the removal of such ravens through non-lethal means will be largely ineffective and may adversely affect the recovery of the species.

### **Impacts to Soil, Water and Air Resources**

**Soil:** Impacts are similar to but less beneficial than alternative 2. This alternative would result in less surface disturbance which should result in reduced erosion rates for those areas within the 211,130 acres in two ACECs within two DWMAs. This would include no change from Alternative 1 in the area susceptible to soil compaction and damage from stopping, parking and camping. Areas outside DWMAs would continue the current condition and trend.

**Water:** Impacts are the same as those in Alternative 2.

**Air:** Impacts are the same as those in Alternative 2.

### **Impacts to Wilderness**

Impacts are the same as Alternative 1.

### **Impacts to Cultural and Native American Values**

Impacts are similar to Alternative 2 with exception that burro removal would not occur in Shadow Valley and therefore the negative impacts to cultural resources at and near existing water sources used by clustering burro populations would continue. Positive impacts from changing MUC M to L will be substantially less than Alternative 2, with sites on 3,960 acres rather than 48,642 acres benefiting.

### **Impacts to Wild Horses and Burros**

Impacts would be the same as Alternative 1



### **Impacts to Cattle Grazing (and Allotments)**

This alternative is the same as Alternative 1 (No Action) except: Cancellation of ephemeral portions of AUMs will result in small impacts to cattle operations in three allotments with the potential loss of income from extra cows in up to four years out of twenty. Remaining cattle will enjoy better forage conditions in those years. The sixth allotment, Piute Valley, which has been used in only two years of the last twenty, would be eliminated. The impacts of this elimination are negligible given its infrequent use.

### **Impacts to Utilities**

Impacts are the same as Alternative 3.

### **Impacts to Recreation Resources and Activities**

Impacts are the same as Alternative 2 with the exception that all of the area north of Interstate 15 would be excluded from the DWMA. Recreation activities, including rockhounding, vehicle touring, visitation of historic mining and traditional sites could continue in this area with no change from the current situation. The impacts of changes in the parking, stopping and camping limitations along routes of travel would be the same as Alternative 1.

### **Impacts to Minerals and Mining**

Impacts are similar to Alternative 2 except that exploration and development for gold would be more likely in that area of the southwestern portion of the Shadow Valley unit that would remain outside the DWMA and remain multiple use class M. This area would also become Category III, rather than Category I habitat, with less stringent mitigation measures and lower compensation requirements.

### **Impacts to Vehicle Access**

Impacts are the same as Alternative 2.

## **4.2.5 PREFERRED ALTERNATIVE - Desert Tortoise**

### **Impacts to Vegetation**

**General Vegetation:** Impacts to vegetation are similar to Alternative 2 except that about 312,485 acres would be affected, or 41,815 acres less than Alternative 2, and 12,705 acres less than Alternative 3, and 101,355 more acres than Alternative 4. The grazing management strategy is Alternative 3 and beneficial impacts from elimination of ephemeral grazing and restriction of grazing during the spring growing season are positive to general vegetation but not as beneficial as elimination of grazing under Alternative 2.



**Special Status Plants:** Impacts are the same as Alternative 2.

**Biological Soil Crusts:** Impacts to biological soil crusts are similar to Alternative 3 but over a slightly smaller area. (See the discussion on General Vegetation above.)

**Riparian/Wetlands:** Impacts are the same as Alternative 1.

**Noxious Weeds:** Impacts are the same as Alternative 2.

### **Impacts to Wildlife**

**General Wildlife:** Impacts to general wildlife populations and habitats will be similar to Alternative 3 but over a slightly smaller area. (See the discussion on General Vegetation above.)

**Special Status Animals:** Impacts to desert tortoise are similar to Alternative 3 but over a slightly smaller area. The area excluded is in western Shadow Valley south of Turquoise Mountain. See the discussion on General Vegetation above.

### **Impacts to Soil, Water and Air Resources**

**Soil:** This alternative would result in less surface disturbance which should result in reduced erosion rates for the 312,485 acres within DWMAs. Areas outside DWMAs would continue the current condition and trend.

**Water:** Impacts are the same as Alternative 2.

**Air:** Impacts are the same as Alternative 2.

### **Impacts to Wilderness**

Impacts are similar to Alternative 3 except a small area of Hollow Hills Wilderness would not receive beneficial impacts from modified grazing practices within DWMAs.

### **Impacts to Cultural and Native American Values**

Impacts are similar to Alternative 3 except: Potential for impacts to known and undiscovered cultural resources and Native American values in the Turquoise Mountain area west of Turquoise Mountain Road would be higher as these areas would not be included in the DWMAs.

### **Impacts to Wild Horses and Burros**

Impacts to wild horses and burros are the same as Alternative 3.



### **Impacts to Cattle Grazing (and Allotments)**

Impacts are the same as Alternative 3. Additional impacts to grazing may occur if allotments fail to meet standards within DWMA and grazing is found to be contributory.

### **Impacts to Utilities**

Impacts are the same as Alternative 3.

### **Impacts to Recreation Resources and Activities**

Impacts are the same as Alternative 3 with the exception that the western portion of Shadow Valley, around and south of Turquoise Mountain, would be excluded from the Shadow Valley ACEC. Recreation activities could continue in this area with no change from the current situation. The MUC in this area would remain Moderate. The impacts of changes in the parking, stopping and camping limitations along routes of travel within the DWMA would be the same as Alternative 3.

### **Impacts to Minerals and Mining**

Impacts are similar to Alternative 3 except that 30,010 acres would be reclassified from MUC M to L rather than 42,713 acres and 12,705 additional acres of BLM Category I habitat would be converted to Category III habitat outside DWMA boundaries.

### **Impacts to Vehicle Access**

Impacts are similar to Alternative 2 except that the western portion of Shadow Valley, around and south of Turquoise Mountain would remain MUC Moderate and routes would be designated under MUC M guidelines.



## 4.3 AMARGOSA VOLE CONSERVATION AND RECOVERY

This amendment was developed to provide a strategy to manage Amargosa vole habitat on BLM lands to achieve the recovery criteria defined in the *Draft Recovery Plan for the Amargosa Vole*. The alternatives primarily considered recommendations in the Draft Recovery Plan (see Appendix H for a list of the recommendations). These recommendations would be adopted for all proposed Amargosa vole ACEC areas, except where noted otherwise. (Refer to Chapter 7, Figure 9a through e for a visual representation of the identified areas.)

### 4.3.1 ALTERNATIVE 1 (No Action) - Amargosa Vole

#### Impacts to Vegetation

**General Vegetation:** Riparian and wetland plant communities benefit from existing measures to protect habitat for Amargosa vole in Grimshaw Marsh and Amargosa Canyon ACECs. There are ongoing efforts to remove exotic tamarisk from these wetland and riparian areas (see discussion for Riparian/Wetlands below).

**Special Status Plants:** Tecopa birdsbeak is a rare plant species in the Grimshaw Natural Area ACEC and receives protection there. No other special status plants are known from the existing ACECs.

**Biological Soil Crusts:** It is thought that the low to mid-elevation arid ecosystems in the west developed with low levels of surface disturbance. Crust response to disturbance is highly variable. Cyanobacteria are the most resistant to disturbance, are highly mobile and can recolonize disturbed surfaces rapidly. Lichens vary in resistance based on type. Mosses have a high susceptibility to disturbance. Lichens and mosses are susceptible to burial. Disturbance results in reduced lichen and moss cover by burial, and Cyanobacteria may increase and replace the lichens and mosses decreasing the species diversity. Biological crusts on sandy soils are less susceptible to disturbance when moist or wet. Clay soils are less susceptible to disturbance when crusts are dry.

Removal of the feral cattle and restricting OHV access may reduce impacts to the biological soil crusts.

**Riparian/Wetland:** Riparian and wetland plant communities including cottonwood/willow, emergent wetland, alkaline marsh, and mesquite bosque on affected public lands would continue to be managed under CDCA Plan guidance for MUC L. Current riparian restoration activities on public lands in China Ranch Wash, Amargosa Canyon ACEC and Grimshaw Lake ACEC areas would continue, but would not be expanded northward along the Amargosa River. These activities are primarily focused on the removal of exotic plants (*Tamarix* spp.) and the reestablishment of native vegetation. Exotic plants occurring on private lands within the Shoshone stretch of the river which are gradually displacing native vegetation would not be removed, and riparian restoration activities



would not occur except where initiated by private landowners. Exotics in this area would likely continue to serve as a seed source for further exotic plant establishment in downstream portions of the Amargosa River. This will take place despite current and planned efforts to control these plants in the two downstream ACECs, with the result that overall watershed restoration will be substantially slowed.

Additional consolidation of fragmented riparian and wetland habitat would not occur. Private lands along the Amargosa River near Shoshone that support extensive riparian, mesquite bosque and wetland habitat would not be identified for possible acquisition from willing landowners. This area is one of only a few above-ground flow stretches of the River, and is used by a wide variety of nesting neotropical birds, the Chicago Valley wild horse herd, Nevada speckled dace, Amargosa pupfish and Shoshone pupfish (historically).

**Noxious Weeds:** See the discussion above for Riparian/Wetlands.

### **Impacts to Wildlife**

**General Wildlife:** Neotropical migrants as well as other wetland and riparian obligate bird species use the Amargosa River and associated wetlands at Grimshaw Marsh for breeding, wintering, and migration. These habitats on public lands would continue to receive improvement by the removal of exotic tamarisk and replanting of native trees. Improvements on adjacent private lands are unlikely, and wildlife values are likely to decline as tamarisk infestations spread due to lower forage, habitat such as nesting and diversity values for wildlife provided by tamarisk. Consolidation of additional habitat important to migratory birds would not occur.

**Special Status Animals:** The Amargosa vole and its habitat would continue to be managed consistent with MUC L guidelines in the CDCA Plan. In addition, Federal actions that may affect the Amargosa vole or its habitat, as well as other federally-listed species, would continue to receive review by USFWS under the consultation procedures of the Endangered Species Act. Mitigation measures limiting the effects of Federal projects would be jointly developed and implemented.

In addition to the protection afforded by the CDCA Plan and by regulatory mechanisms of the Endangered Species Act, there are two existing ACECs with plan prescriptions that guide BLM management in Amargosa Canyon and in Grimshaw Marsh. However, other public lands located north of the Grimshaw Lake ACEC and south of the town of Shoshone that support a small ribbon of riparian habitat believed suitable for the Amargosa vole would continue under current MUC L management but would not receive special management prescriptions through ACEC designation.

Additional substantive consolidation of currently fragmented vole habitat would not occur. Two parcels and one State lands section located in Amargosa Canyon that contain vole habitat and that were identified for acquisition in the Amargosa Natural Area ACEC could still potentially be acquired. Other private lands supporting extensive riparian and



wetland habitat used by Amargosa vole would not be identified for possible acquisition from willing landowners and subsequent management for the vole.

Indirect impacts from development on adjacent private lands include incidental take of Amargosa vole and loss or degradation of habitat and downstream riparian impacts associated with increased spillover activities on public lands including casual recreational use, proliferation of routes, and illegal dumping. These impacts may be mitigated by additional route designation on public lands, as needed.

The federally-listed least Bell's vireo that breeds in riparian habitat in the Amargosa Canyon would continue to receive review by USFWS under the consultation process. Prescriptions in the Amargosa Canyon Natural Area ACEC and MUC L guidelines in the CDCA Plan provide additional protection. Some consolidation of currently fragmented riparian habitat that would benefit this species would occur, but overall fragmentation of the riparian corridor would continue. Similar impacts could occur to the federally-listed southwestern willow flycatcher if it occurs here. State-listed yellow-billed cuckoos have been recorded, but a breeding population is not known to exist here. The current management of the area would not significantly affect this species.

Habitat for the California BLM sensitive Shoshone Cave whip-scorpion located just north of Shoshone would continue under prescriptions in the existing habitat management plan (HMP). The cave would be managed apart from the downstream Amargosa Canyon and Grimshaw Lake ACECs, and there would be little consideration for this species as part of an Amargosa River watershed strategy.

Habitat for two California BLM sensitive fish - Amargosa pupfish and Nevada speckled dace - outside of the two existing ACECs would be managed under MUC L guidelines and under BLM's Special Status Fishes Strategy. They would not be included in an Amargosa River watershed strategy.

### **Impacts to Soil, Water and Air Resources**

**Soil:** Soil erosion rates will continue at current rates.

**Water:** Impacts from the no action alternative represent non-point-source impacts which are controlled by Best Management Practices (BMP). Portions of the MUC and ACEC guidance for the CDCA Plan and specific management actions in the Amargosa and/or Grimshaw Natural Area ACEC Plans represent BMP under the Clean Water Act. These practices include water quality monitoring, removal of exotic tamarisk and replacement with native species, prohibition of vehicle use, camping and geothermal leases to protect surface or groundwaters, applying for public water resources and providing hydrologist review of projects. These BMPs reduce sedimentation and increase infiltration rates. These are desirable and are positive steps toward solution of the impaired watershed classification which occurs in portions of this watershed. In addition, implementation of fallback standards as identified in 4.1.1 will provide some beneficial impacts to water quality.



**Air:** Air quality would not be affected by Alternative 1 for vole conservation and recovery except as identified in 4.1.1, implementation of fallback standards.

### **Impacts to Wild and Scenic Rivers**

As a result of eligibility determinations on twenty public land miles of the Amargosa River that are being evaluated for suitability in the National Wild and Scenic Rivers System, biological, geologic, physiographic, recreational, scenic and wilderness values found along various stretches shall receive additional protection and management to preserve the rivers free-flowing character and unique features. These remarkable values are described in more detail in Appendix O. Existing strategies identified for the vole and its habitat, to manage exotic invasive species and implement standards including maintaining Proper Functioning Condition in riparian and wetland habitat will benefit these values.

### **Impacts to Cultural and Native American Values**

Sensitive historic (principally the Tonapah and Tidewater Railroad, mines, adits and historic structures) and prehistoric (temporary camps and possible village sites) cultural resources in the identified habitat outside of the existing Amargosa Canyon and Grimshaw Lake Natural Area ACECs would continue to be the focus of general recreation activity, unguided site visitation, and impacts from vandalism. Overall impacts of Alternative 1 on known Native American values are modestly negative. Few projects that would trigger inventory or evaluation are likely to occur, and existing resources are not yet adequately documented. The ability to prevent inadvertent loss of cultural resources would remain limited in comparison to the cultural resources located within the two ACEC areas. Over time important known and undiscovered cultural resources (primarily associated with nearby springs, associated riparian areas) may be lost due to continuing uses and lack of inventory, evaluation, and data recovery.

Adoption of this alternative is unlikely to, but could result in an irreversible and irretrievable commitment of important cultural resources or Native American values outside of existing ACECs, particularly for notice-level mining actions. Site-specific analysis would occur prior to ground disturbing activities authorized by BLM.

### **Impacts to Wild Horses and Burros**

There are no impacts to wild horses and burros under Alternative 1. There are no Herd Areas or Herd Management Areas that overlap existing ACECs and critical habitat for Amargosa vole.

### **Impacts to Cattle Grazing (and Allotments)**

There would be no impacts from Alternatives 1 (No Action) since no cattle grazing allotments are located in the area.



### **Impacts to Recreation Resources and Activities**

Alternative 1 consists primarily of activities already identified in the CDCA Plan for the conservation and recovery of threatened and endangered species and in follow-up management plans developed for ACECs. Currently, motor vehicles are prohibited within the two existing ACECs (Grimshaw Lake and Amargosa Canyon), with the exception of parking areas located at major trailheads. Application of the route designation criteria to conserve special status species and natural communities results in minor impacts to vehicular access and, therefore, to motorized recreation.

If the "No Action" alternative is selected special management actions will be applied to achieve the recovery criteria defined in the U.S. Fish and Wildlife Service Recovery Plan for the Amargosa Vole. These special actions apply to all five of the alternatives discussed in this section regarding the Amargosa Vole but cover different geographical areas. All recreational activities and improvements must be consistent with recovery criteria. Regardless of the alternative, these special actions will result in minor positive impacts for low-impact recreation activities. Actions in the existing ACEC plans to interpret the Amargosa along the T&T grade will enhance the recreational experience. This trail provides a unique and scenic destination that attracts hikers from around the world. Actions to secure and protect wetland habitats from geothermal development will help ensure current water flows at local hot springs, which are a popular recreational destination. Actions to improve and maintain access roads, trailheads and parking areas will benefit visitor travel in the area. Overall, the special management actions will provide a minor positive benefit to recreation resources in the affected environment. No irreversible and irretrievable commitment of recreation resources will occur.

### **Impacts to Minerals and Mining**

Impacts to mineral development would be minor. Critical habitat status for the Amargosa vole would hinder potential development of geothermal waters on public lands and expansion of existing geothermal development on nearby private lands. These impacts are the same for all alternatives.

### **Impacts to Vehicle Access**

Some indirect impacts may occur from development on adjacent private lands, including proliferation of routes.

### **Impacts to Land Uses**

Minimal impacts would occur to other land uses outside of critical habitat for the vole. Within critical habitat future development may be impacted, although permits are infrequent in this area. These uses may include substantial parameters including additional costs for processing permits and/or denial of some permits that may cause affect to the species.



### 4.3.2 ALTERNATIVE 2 - Amargosa Vole

#### Impacts to Vegetation

**General Vegetation:** Management of public lands within the watershed of the Central and Lower Amargosa River would be addressed in one coordinated Amargosa River ACEC Management Plan. One goal of this plan would be the maintenance of proper functioning condition of the River within California, including adequate vegetative cover to protect stream banks, plant communities diverse in age class and species composition and other key components. Coordination with upstream landowners and involved agencies within Nevada would also be sought. See the discussion on Riparian/Wetlands below for additional information. See also, general vegetation discussion under 4.4.2 for Carson Slough.

**Special Status Plants:** A population of Tecopa birdsbeak a few miles south of Shoshone would be included in the expanded ACEC. It would be an additional focus for protection measures in subsequent ACEC planning. No other special status plants are known to be within the expanded ACEC.

**Biological Soil Crusts:** Impacts are the same as Alternative 1.

**Riparian/Wetland:** Riparian and wetland plant communities including cottonwood/willow, emergent wetland, alkaline marsh, and mesquite bosque on affected public lands would continue to be managed under CDCA Plan guidance for MUC L. In addition prescriptions would be developed for a single, coordinated, watershed-based ACEC. Current riparian restoration activities to benefit water, soil, vegetation and wildlife values on public lands in the China Ranch Wash, Amargosa Canyon ACEC and Grimshaw Lake ACEC areas would continue and be expanded northward along the Amargosa River.

Enhancement of riparian and wetland values would occur as tamarisk removal efforts were extended over a wider portion of the watershed (see the discussion in 4.3.1 for Riparian/Wetlands).

**Noxious Weeds:** Similarly, exotic plants (*Tamarix* spp.) occurring on private lands within the Shoshone stretch of the river and which are gradually displacing native vegetation would be removed and riparian restoration activities would occur, following Federal acquisition of the property. The exotic plant seed source problem in this area, which results in the deposition of seeds and vegetative material into downstream portions of the Amargosa River including the most scenic canyon area south of Tecopa, could then be reduced or eliminated.

#### Impacts to Wildlife

**General Wildlife:** Wildlife within the proposed ACEC would benefit from riparian habitat consolidation, wider application of actions identified as part of the Amargosa vole recovery strategy, and watershed management measures identified for the ACEC plan.



Specific management actions would be directed towards the continued viability of the numerous endemic species, including spring-dependent macro-invertebrates and special status animals. More particularly, the public lands located north of Grimshaw Lake ACEC and south of the town of Shoshone that support a small ribbon of riparian habitat, important as a nesting area for several neotropical migratory bird species, would be given special management through an ACEC plan. The newly expanded ACEC areas would receive additional monitoring and management emphasis as prescribed in the ACEC plan.

**Special Status Animals:** This alternative would have the greatest benefit to the federally threatened Amargosa vole. Public lands on approximately 10,450 additional acres (19,760 total acres) including all of designated Amargosa vole critical habitat and additional available vole habitat in the Amargosa riparian corridor would have management prescriptions to promote Amargosa vole recovery. Special status species prescriptions would focus on vole population inventory and monitoring and on habitat maintenance and improvement. Habitat improvement measures would emphasize riparian habitat restoration, control of exotics, and land acquisition.

Vole management would be enhanced by consolidation into one integrated ACEC plan. In particular, riparian lands north of Grimshaw Lake ACEC and south of Shoshone believed suitable for the Amargosa vole, and several other recently acquired riparian and wetland area parcels important for the vole located north and east of Grimshaw Lake would be integrated into this planning effort.

The acquisition and consolidated management of riparian and watershed resources and increased management emphasis in the enlarged ACEC would benefit other threatened and endangered species, such as least Bell's vireo and possibly southwestern willow flycatcher, and BLM sensitive species, such as Amargosa pupfish and Nevada speckled dace, along the Amargosa River. Expanded riparian restoration activities would benefit least Bell's vireo especially. Inclusion of Shoshone Cave area in the ACEC and preparation of a coordinated watershed strategy would aid in protection of Shoshone Cave whip-scorpion habitat. In addition to special species recovery, management actions would be aimed at improved coordination of watershed planning and increased partnerships with neighboring landowners and other agencies.

On affected public lands outside of the expanded ACEC, the Amargosa vole and other special status species and their habitat would continue to be managed consistent with MUC L guidelines in the CDCA Plan.

### **Impacts to Soil, Water and Air Resources**

**Soil:** Impacts are the same as Alternative 1.

**Water:** The Amargosa watershed would derive increased benefits from a coordinated watershed protection strategy and increased monitoring focus. Other beneficial impacts would be the same as Alternative 1.



**Air:** Impacts would be similar to Alternative 1 except beneficial impacts would cover a larger ACEC area.

### **Impacts to Wild and Scenic Rivers**

Impacts are similar to Alternative 1 except additional strategies identified to enhance vole habitat and watershed coordination will further benefit Wild and Scenic River values.

### **Impacts to Cultural and Native American Values**

Identification of additional measures to protect cultural resources would occur in the context of the supplemental ACEC management planning for the Amargosa vole. At a minimum, important cultural resources would benefit by improved inventory and documentation in the context of subsequent implementation of appropriate actions for protection of Amargosa vole habitat. Cultural resources within the expanded ACEC would become part of a permanent complex of important cultural resources that would be available for study, interpretation, and public enjoyment into the foreseeable future. The proposed ACEC includes scientifically significant prehistoric and historic cultural resources and Native American values. Designation of these areas within the discontinuous Amargosa River ACEC will afford greater protection to these resources.

Site-specific manipulation of vegetation habitat, including tamarisk removal, recreational development such as trail building and ancillary activities may impact cultural resources and Native American values. These impacts may be mitigated with site-specific surveys, by avoidance or data collection. This impact is similar in scope to Alternative 1 (No Action), but may affect cultural resources on approximately 10,450 more acres.

Identification of additional measures to protect Native American values would occur in the context of the supplemental ACEC management planning for the Amargosa vole. Expanded ACEC management planning would result in additional coordination with the potentially affected tribal groups, and would better assure adequate access to and protection of tribal values, including village sites, known and suspected collection areas and known traditional use areas for Native Americans. The identified 160 acres of exchange lands in the Tecopa area includes an important pre-historic campsite. Site specific surveys on the public lands would be required prior to final decision on disposal. Appropriate mitigation for the loss of significant cultural resources will be required.

### **Impacts to Wild Horses and Burros**

Impacts are the same as Alternative 1 (No Action). The inclusion of the Carson Slough area in the ACEC would result in maintenance of the wild horse herd at its current lower numbers. The AML would be changed from 28 to 12 horses to reflect the current population levels, and 28 to 0 burros to eliminate the few remaining burros (see 4.4.2 for a discussion of wild horse and burro impacts).



### **Impacts to Cattle Grazing (and Allotments)**

Impacts are the same as Alternative 1 (No Action).

### **Impacts to Recreation Resources and Activities**

Overall, this alternative will have a moderate positive benefit to recreation resources and activities. The recreation experience here is directly tied to the condition of the environment. Where the actions in this alternative improve the natural resources, they also improve the setting for nature-based recreation experiences. ACEC Management planning will integrate vole protection strategies, vegetation management strategies, and recreational management strategies for the area. Recreational management strategies can be anticipated to include additional trails, trail improvements, interpretive opportunities and additional activities that will enhance visitor experiences and increase partnership with local communities. Visitors will also benefit from the combining of existing separate management units into one, easy to identify destination. By reducing the number and type of management areas we will reduce the potential for confusion and allow for increased focus on the recreational experience.

### **Impacts to Minerals and Mining**

Impacts are the same as Alternative 1 except this Alternative would limit the potential expansion of existing sand and gravel mining operations located east of Highway 127 and north of Furnace Creek Road. The existing pit is located within the boundary of the proposed ACEC under this alternative and new limitations could interfere with its expansion.

The Southern Clay Products' hectorite mine is located more than 1000 feet from the Amargosa River and direct conflicts with the riparian area would be minimal. However, if the pit encounters groundwater and the pit requires dewatering, special mitigation measures would be necessary to prevent lowering of the water table within the riparian area or discharging sediment laden water which might impact water quality.

Approximately 10,450 acres of public lands would be added to the existing ACEC. However, these lands are currently classified as MUC L that requires an approved Plan of Operations prior to conducting surface disturbing operations. Additional management actions to protect riparian habitat or prevent take on Amargosa vole could further increase costs or limit future mineral operations, curtail activities in the riparian zone, and/or provide higher reclamation standards for disturbed areas. The new ACEC designation is not expected to be substantially more restrictive than new mitigation that might be required for protection of critical habitat or any habitat where vole may be affected.



### **Impacts to Vehicle Access**

Impacts are the same as Alternative 1 (No Action) except: new route designation is unlikely to be a substantial change from the existing situation in the Amargosa. Some routes may be closed to protect listed plants in the Carson Slough area, based on results of analysis and site-specific plant surveys. Additional public input and review will occur in conjunction with the ACEC management planning effort.

### **Impacts to Land Uses**

Impacts to development include parameters on future rights-of-way or land-use permits, particularly where riparian impacts could occur, to be developed and analyzed in conjunction with ACEC management planning. These changes will result in increased costs and may preclude some activities within the ACEC. However, the impacts are not considered significant, given the small number and size of current land-use permits and rights-of-way in the area. The Tecopa Hot Springs land-use authorization is not anticipated to be affected. Impacts are similar in scope as those for Alternative 1 (No Action) but would affect future permits proposed over approximately 10,450 more acres.

In addition, under this alternative, new locatable mining activities would require a plan of operations in conjunction with environmental assessment and biological consultation. ACEC management planning may identify additional parameters for some or all surface disturbing activities within the ACEC.

Adoption of this alternative would not result in an irreversible and irretrievable commitment of development opportunities or other land uses.

## **4.3.3 Alternative 3 (Preferred) - Amargosa Vole**

### **Impacts to Vegetation**

**General Vegetation:** Impacts to plant communities would be similar to those described in Alternative 2 but over an area 2,400 acres smaller.

**Special Status Plants:** Impacts are the same as Alternative 2.

**Biological Soil Crusts:** Impacts are the same as Alternative 1.

**Riparian/Wetland:** Impacts to plant communities would be similar to those described in Alternative 2 but over an area 2,400 acres smaller.

**Noxious Weeds:** Removals of noxious weeds would be similar to those described in Alternative 2 but over an area 2,400 acres smaller. Noxious weed control would be less beneficial but still positive overall.



### **Impacts to Wildlife**

**General Wildlife:** Impacts to wildlife populations in general would be similar to those described in Alternative 2 but over an area 2,400 acres smaller.

**Special Status Animals:** Impacts to Amargosa vole would be similar to those described in Alternative 2 but over an area 2,400 acres smaller. All critical habitat plus other vole habitat would be within the new Amargosa River ACEC. ACEC management direction would also be similar to Alternative 2. Management of habitat for the Shoshone Cave-whip scorpion would continue under the existing Shoshone Cave Whip-scorpion Habitat Management Plan.

### **Impacts to Soil, Water and Air Resources**

**Soil:** Impacts would be similar to Alternative 2 but would cover a smaller area.

**Water:** Impacts would be the same as Alternative 2.

**Air:** Impacts would be the same as Alternative 1.

### **Impacts to Wild and Scenic Rivers**

Impacts would be similar to Alternative 2 but would cover a smaller area.

### **Impacts to Cultural and Native American Values**

There would be similar effects to cultural and Native American values under this alternative as for Alternative 2. However the number of cultural resources and known Native American collection areas that would be afforded protection under this alternative would be slightly decreased compared to Alternative 2, and moderately increased compared to Alternative 4. The potential for inadvertent affect to cultural resources from vegetation or recreation management activities would be moderately greater than Alternative 1 (No Action) and slightly less than Alternative 2. The identified 140 acres of exchange lands in the Tecopa area will require site specific surveys on the public lands prior to disposal. Appropriate mitigation for the loss of significant cultural resources will be required.

### **Impacts to Wild Horses and Burros**

Impacts are the same as Alternative 2.

### **Impacts to Cattle Grazing (and Allotments)**

Impacts are the same as Alternative 1 (No Action).



### **Impacts to Recreation Resources and Activities**

Impacts are the same as Alternative 2; the difference in size will not have an effect on impacts to recreation resources and activities.

### **Impacts to Minerals and Mining**

Impacts are the same as Alternative 2 except the proposed ACEC expansion would exclude an existing sand and gravel operation east of Highway 127 and north of Furnace Creek Road and therefore future County road improvements would be facilitated.

### **Impacts to Vehicle Access**

Impacts are the same as Alternative 2.

### **Impacts to Land Uses**

Impacts to Land use are similar in scope as Alternative 2, except approximately 2,400 acres less than Alternative 2 would be potentially affected by parameters on new development.

## **4.3.4 Alternative 4 - Amargosa Vole**

### **Impacts to Vegetation**

**General Vegetation:** Impacts to plant communities would be similar to those described in Alternative 3 covering an area 4,790 acres smaller (7,190 acres less than Alt 2).

**Special Status Plants:** Impacts are the same as Alternative 1.

**Biological Soil Crusts:** Impacts are the same as Alternative 1.

**Riparian/Wetland:** Impacts to plant communities would be similar to those described in Alternative 3 covering an area 4,790 acres smaller.

**Noxious Weeds:** Removals of noxious weeds would be similar to those described in Alternative 2 covering an area 7,190 acres less. Noxious weed control would be substantially less beneficial but still positive.

### **Impacts to Wildlife**

**General Wildlife:** Impacts to wildlife populations in general would be similar to those described in Alternative 3 but over an area 4,790 acres smaller. Important areas for neotropical migratory birds that are outside of the new Amargosa vole ACEC would not receive special ACEC management.



**Special Status Animals:** Impacts to Amargosa vole would be similar to those described in Alternative 3 but over an area 4,790 acres smaller. All critical habitat would be within the new Amargosa vole ACEC. Special management actions in the new ACEC would promote vole recovery within its designated critical habitat. The potential for species recovery may be limited by having only a localized strategy for a mobile species known to range far from its critical habitat area. Some of the public lands that are within the riparian corridor and believed suitable for Amargosa vole would be excluded from the ACEC.

#### **Impacts to Soil, Water and Air Resources**

**Soil:** Impacts would be the same as Alternative 1.

**Water:** Impacts would be the same as Alternative 1.

**Air:** Impacts would be the same as Alternative 1.

#### **Impacts to Wild and Scenic Rivers**

Impacts are the same as Alternative 1.

#### **Impacts to Cultural and Native American Values**

There would be similar effects to cultural resources and Native American values in the newly designated ACEC as for Alternatives 2 or 3. However the number of cultural resources and known Native American collection areas that would be afforded protection under this alternative would be substantially decreased from Alternative 2 and moderately decreased from Alternative 3. Potential for inadvertent affect to cultural resources from vegetation or recreation management activities would be similar to Alternative 1 (No Action). The identified 100 acres of exchange lands in the Tecopa area will require site specific surveys on the public lands prior to disposal. Appropriate mitigation for the loss of any significant cultural resources will be required, if found.

#### **Impacts to Wild Horses and Burros**

Impacts are the same as Alternative 1 (No Action).

#### **Impacts to Cattle Grazing (and Allotments)**

Impacts are the same as Alternative 1 (No Action).

#### **Impacts to Recreation Resources and Activities**

The impacts of Alternative 4 are similar to Alternative 1 (No Action). Recreation uses may be impacted within the ACEC, just as they may in current critical habitat.



Recreation will not receive any focus in the ACEC management planning, so it will be less enhanced in this ACEC than other alternatives.

### **Impacts to Minerals and Mining**

Impacts are the same as Alternative 1 (No Action). Additional limitations on mining and other surface disturbing activities may be identified in subsequent ACEC Management Planning.

### **Impacts to Vehicle Access**

Impacts to vehicle use are the same as Alternative 2.

### **Impacts to Land Uses**

Impacts are similar in scope and acreage affected as Alternative 1 (No Action).



## 4.4 THREATENED AND ENDANGERED SPECIES CONSERVATION: T&E Plants Lower Carson Slough Conservation Area Options

This amendment was developed to provide a strategy to manage habitat on BLM lands for three federally-listed plants - Amargosa niterwort, Ash Meadows gumplant, and spring-loving centaury. No recovery plans have yet been developed for these plants. Therefore, alternatives consider ACECs, if any, and special management actions using recommendations identified during designation of critical habitat for the niterwort and gumplant (refer to Chapter 7, Figure 10 for a visual representation of the identified areas).

### 4.4.1 ALTERNATIVE 1 (No Action) - T&E Plants

#### Impacts to Vegetation

**General Vegetation:** Within the Carson Slough area, there are numerous plant communities of interest, including riparian, alkali marsh, and mesquite bosque. Impacts to vegetation should be modest on public lands located north of Ash Meadows Road that would continue to be managed under CDCA Plan guidance for MUC L. Impacts to vegetation may be somewhat greater on public lands located south of Ash Meadows Road that would continue to be managed under CDCA Plan guidance for MUC M, due to moderate potential for mining activities under notice. Public lands on both sides of Ash Meadows Road would continue to receive special management attention (primarily through the environmental review process for conflicting activities) as a Salt and Brackish Water Marsh Unusual Plant Assemblage (UPA).

**Special Status Plants:** Any proposed project or activity that might affect one or more of the three species (Amargosa niterwort, ash meadows gumplant and spring-loving centaury) would receive review by USFWS under the consultation procedures of the Endangered Species Act. Mitigation measures jointly developed by BLM and USFWS would ensure that the plant populations are not jeopardized. For most endangered plants, avoidance of impacts is the preferred mitigation.

According to guidance in the UPA Monitoring Plan, monitoring of wetlands in the UPA and monitoring of related threatened and endangered plants would continue as staff time and funding are available. Under this alternative, no specific management for recovery of Amargosa niterwort, ash meadows gumplant and spring-loving centaury would be identified at this time. Consequently, additional protective actions would not be implemented, and ACEC designation would not occur. Existing gaps in information on listed plant distribution and population size and threats would remain for the foreseeable future.

**Biological Soil Crusts:** It is thought that the low to mid-elevation arid ecosystems in the west developed with low levels of surface disturbance. Crust response to disturbance is highly variable. Cyanobacteria are the most resistant to disturbance, are highly mobile



and can recolonize disturbed surfaces rapidly. Lichens vary in resistance based on type. Mosses have a high susceptibility to disturbance. Lichens and mosses are susceptible to burial. Disturbance results in reduced lichen and moss cover by burial, and Cyanobacteria may increase and replace the lichens and mosses decreasing the species diversity. Biological crusts on sandy soils are less susceptible to disturbance when moist or wet. Clay soils are less susceptible to disturbance when crusts are dry.

Establishing ACEC's and restricting surface disturbing activities will reduce the impacts to biological soil crusts.

**Riparian/Wetland:** The Salt and Brackish Water Marsh Unusual Plant Assemblage overlaps portions of the entire area and there are some existing impacts primarily south of Ash Meadows Road from activities related to OHV use off of routes. Some of this activity is believed to be related to mining exploration. The playa is delicate and does not repair readily.

**Noxious Weeds:** There are some positive impacts to the control of noxious weeds associated with Alternative 1 based on on-going efforts to control non-native invasive species on public lands. These efforts are not specifically associated with T&E Plant conservation and recovery, but do support Alternative 1 of standards and guidelines.

### **Impacts to Wildlife**

**General Wildlife:** Wetland and riparian habitats are uncommon in the desert and are critical to wildlife, especially neotropical migrant birds in spring and fall. This is one of the few such areas in the CDCA administered by the BLM that is not managed under specific prescriptions in an ACEC management plan. Little is known of the use of this area by neotropical migrant birds, waterfowl, shorebirds, bats, or other wildlife species, and therefore it is difficult to quantify impacts. Sense use of the area is generally low impacts to wildlife are generally low. The greatest threats to wildlife may be threats to water quality and quantity which pose direct threats to key components of their habitat.

**Special Status Animals:** Other than neotropical migrant birds, no special status animals have been recorded in this area. Several species of bats designated as BLM sensitive probably forage in the wetlands. Tamarisk and other exotic invasives may pose threats to their foraging habitat. Other impacts are similar to those for general wildlife.

### **Impacts to Soil, Water and Air Resources**

**Soil:** Soil erosion rates will continue at current rates.

**Water:** Impacts from the no action alternative represent non-point-source impacts which are controlled by Best Management Practices (BMP). Portions of the MUC guidance for the CDCA Plan and specific management actions in the Carson Slough area and the UPA represent BMP under the Clean Water Act. These practices include removal of exotic tamarisk and replacement with native species, route closures and restrictions on vehicle



use, monitoring of surface waters, and providing hydrologist review of projects. These BMPs reduce sedimentation and increase infiltration rates. These are desirable and are positive steps toward solution of the impaired watershed classification which occurs in portions of this watershed. In addition, implementation of fallback standards as identified in 4.1.1 will provide some beneficial impacts to water quality and quantity.

**Air:** Air quality would not be affected by Alternative 1 for T&E plant conservation and recovery except as identified in 4.1.1, implementation of fallback standards.

### **Impacts to Wild Horses and Burros**

The current management prescriptions would not impact the wild horse herd in this area. Monitoring and survey activities would be undertaken to further evaluate strategies to protect listed plants from trampling and measures may be identified that limit wild horse access to some areas through fencing or other means. The Appropriate Management Level for wild horses and burros would remain at 28 animals for each.

### **Impacts to Recreation Resources and Activities**

Alternative 1 consists primarily of activities already identified in the CDCA Plan for the conservation and recovery of threatened and endangered species and in follow-up implementation activities for UPAs and riparian areas. Application of existing CDCA Plan route designation to conserve special status species and natural communities results in minor impacts to vehicular access, and therefore, to recreation.

If the "No Action" alternative is selected special management actions will be applied to achieve the recovery criteria defined in the U.S. Fish and Wildlife Service Recovery Plan for the three plant species. These special actions apply to all alternatives discussed in this section regarding the listed plants but cover different geographical areas. All recreational activities and improvements must be consistent with recovery criteria. Regardless of the alternative, these special actions will result in minor positive impacts for low-impact recreation activities. No irreversible and irretrievable commitment of recreation resources will occur.

### **Impacts to Minerals and Mining**

All proposed activities, including mining, within critical habitat for T&E plant species would continue to require consultation with USFWS. Surface disturbance from mining would continue to be administered according to MUC requirements for MUC L north of Ash Meadows Road and MUC M south of Ash Meadows Road. An active zeolite mine five miles east of Death Valley Junction would not be affected except for T&E plant survey and appropriate mitigation if an expansion of the mine is proposed.

### **Impacts to Vehicle Access**

There would be minimal additional impacts anticipated to vehicle access. Much of the playa is already closed to vehicular use. Supplemental route designation may be pursued



north of Ash Meadows Road as time and resources permit to protect sensitive soils, riparian areas, and T&E plants. Generally existing routes would continue to be available for use south of Ash Meadows Road in the affected area, unless specific T&E plants are at risk. Two routes were closed in the area more than a decade ago to protect plant populations and the area is being managed under special plant and riparian protection policies.

#### 4.4.2 ALTERNATIVE 2 (Preferred) - T&E Plants

##### Impacts to Vegetation

**General Vegetation:** Riparian, alkali marsh, and mesquite bosque communities on 4,340 acres of public lands would be designated as the Lower Carson Slough ACEC. This includes vegetation and land within and around much of the Salt and Brackish Water Marsh Unusual Plant Assemblage (UPA). Management actions to monitor, protect and study these communities would ensure their conservation and function. Management of plant communities would consider conflicts and resource needs in relation to the Amargosa River watershed. Additional coordination with upstream landowners in the Upper Carson Slough and along the upper Amargosa River would be sought, with the goal of long-term protection of the riparian and other vegetation values present on both sides of the State border. This effort would also promote watershed and ecosystem planning along the entire drainage system and a coordinated management strategy in this ACEC with other downstream ACECs in the central and lower reaches of the Amargosa River including the preservation and enhancement of existing water flows throughout the watershed.

**Special Status Plants:** Amargosa niterwort, Ash Meadows gumplant, and spring-loving centaury on 4,340 acres of public lands on both sides of Ash Meadows Road including and between both designated critical habitat units would be designated the Lower Carson Slough ACEC. The associated ACEC management planning would integrate UPA guidance from the CDCA Plan, recommendations set forth in the final rules for listing and critical habitat designations. (See Appendix G)

Plant population inventory and monitoring would likely increase during and following ACEC plan preparation consistent with ACEC planning objectives. Additional plant protection actions would be implemented according to proposed ACEC plan scheduling. Additional management emphasis would be added to address the relationship of listed plants to the entire Amargosa River watershed and to promote coordination with upstream landowners in the Upper Carson Slough and along the Amargosa River.

**Biological Soil Crusts:** Impacts are the same as Alternative 1.

**Riparian/Wetland:** Designation of the Lower Carson Slough ACEC on 4,340 acres of public lands that includes highly sensitive Salt and Brackish Water Marsh UPA would result in substantial beneficial impacts to wetland and riparian habitat. See the discussion on General Vegetation above.



**Noxious Weeds:** There are some positive impacts to the control of noxious weeds associated with Alternative 2 based on on-going efforts to control non-native invasive species on public lands. These efforts may increase somewhat with the designation of the ACEC but are not specifically associated with T&E Plant conservation and recovery. They do support Alternative 2 of standards and guidelines.

### **Impacts to Wildlife**

**General Wildlife:** Wildlife species dependent upon wetland and riparian habitat (e.g., neotropical migrant birds, riparian songbirds, waterfowl, shorebirds, bats, small mammals) would benefit from the improved management of these communities. Management on a watershed basis would aid in maintaining the functioning condition of the Amargosa River and associated wetland areas.

**Special Status Animals:** See the discussion on General Wildlife above.

### **Impacts to Soil, Water and Air Resources**

**Soil:** Impacts would be similar to Alternative 1 and potential for soil erosion would be decreased by parameters on activities and uses within the ACECs including growth of horse and burro populations and surface disturbance limitations.

**Water:** Impacts would be similar to Alternative 1 but added focus on exotic and invasive species removal, monitoring of surface and groundwater, and assessing proper functioning condition of the wetland and riparian habitat through the implementation of regional standards and guidelines will provide additional benefits to water resources.

**Air:** Air quality would not be affected by Alternative 2 for T&E plant conservation and recovery except as identified in 4.1.2, implementation of regional standards.

### **Impacts to Wild Horses and Burros**

This alternative would adjust the AML for the Chicago Valley HMA from 28 to 12 wild horses and 28 to 0 burros. There would be no direct impacts to wild horses. There is only one herd in the HMA and their numbers are below the proposed AML. It would not be feasible where the animals are located now to manage a herd larger than 12 due to the proximity of two frequently crossed major highways, 190 and 127. In addition, the adjacent HMAs in Nevada have been zeroed out due to public lands transferred to the U.S. Fish and Wildlife Service. The probability of wild horses moving into Nevada thus necessitating removal would increase as their populations increase. There are currently removals of the younger siblings, which are placed in the BLM Wild Horse and Burro Adoption Program so that inbreeding will not occur, and periodic introduction of new mares to increase the genetic health of the herd.

The AML adjustment for burros would eliminate burros from the Chicago Valley HMA. Actual loss of burros is anticipated to be approximately four animals based on latest



census figures. The CDCA Plan recognized habitat for burros that now would be unavailable for any potential re-introduction of burros without a plan amendment. Individual burros in the area would be removed by live trapping methods. Impacts to wild burros are similar to the actions described in section 4.2 for alternatives related to desert tortoise conservation and recovery.

### **Impacts to Recreation Resources and Activities**

Impacts are similar to Alternative 1. Application of route designation criteria to conserve special status species and natural communities during the ACEC planning process may result in additional minor impacts to vehicular access, and therefore, to recreation. This alternative would have a positive impact on recreation activities through the enhancement of a more natural environment and enhanced riparian system. No irreversible and irretrievable commitment of recreation resources is anticipated.

Under the CDCA Plan, there will be opportunities for interested and potentially impacted groups and individuals to participate in development of ACEC activity plans. The activity plan will include a description of types of future uses, activities, or management practices considered compatible with the purposes of the ACEC, as well as a description of any existing incompatible uses, activities, or practices within the area.

### **Impacts to Minerals and Mining**

Impacts are the same as Alternative 1 except 1290 acres of public lands south of Ash Meadows Road would be managed according to MUC guidelines for class L. This would require an approved Plan of Operations before conducting any surface disturbing activity and would increase permitting time and costs for operations of less than five acres. Expansion of the zeolite mine east of Death Valley Junction would require a Plan of Operations and appropriate bonding.

### **Impacts to Vehicle Access**

Route designation will occur concurrent with ACEC management planning. Some additional routes may be closed to protect listed plants and sensitive soil complexes based on results of analysis and survey. Additional public input and review will occur in conjunction with site-specific planning.

## **4.4.3 ALTERNATIVE 3 - T&E Plants**

### **Impacts to Vegetation**

**General Vegetation:** Impacts would be similar to those in Alternative 2 but on 1,540 acres of critical habitat for the niterwort and gumplant, or 2,800 acres less than Alternative 2. The Lower Carson Slough linkage, a 1.2-mile stretch of riparian habitat between the two critical habitat units and part of the Salt and Brackish Water Marsh UPA would continue to be managed consistent with MUC L guidelines.



**Special Status Plants:** Impacts would be similar to those in Alternative 2 but on 2,800 acres less, to include critical habitat for the niterwort and gumplant, and beneficial impacts would be similar for special status plants in areas covered. The Carson Slough linkage, not included in the ACEC in this alternative, is suspected to contain additional locations for these two species as well as the spring-loving centaury. ACEC management plans to be developed would focus on listed plant conservation, monitoring and recovery with less emphasis on watershed management.

**Biological Soil Crusts:** Impacts are the same as Alternative 1.

**Riparian/Wetland:** Impacts would be beneficial but less so than Alternative 2 as the Lower Carson Slough riparian area would not benefit from watershed focused prescriptions and management developed in an ACEC plan and a smaller area of riparian and wetland habitat would be covered.

**Noxious Weeds:** Impacts are the same as Alternative 2

#### **Impacts to Wildlife**

**General Wildlife:** Impacts would be beneficial particularly for neotropical migrant birds, riparian songbirds, waterfowl, shorebirds, bats, small mammals, but less so than Alternative 2 as the Lower Carson Slough riparian habitat would not benefit from watershed prescriptions and a smaller area of riparian and wetland habitat would be covered in the ACEC plan.

**Special Status Animals:** See the discussion for General Wildlife above.

#### **Impacts to Soil, Water and Air Resources**

**Soil:** Beneficial impacts are the same as Alternative 2 but would affect 2,800 acres less.

**Water:** Beneficial impacts are the same as Alternative 2 but would affect 2,800 acres less.

**Air:** Impacts are the same as Alternative 2.

#### **Impacts to Wild Horses and Burros**

Impacts are the same as Alternative 2.

#### **Impacts to Recreation Resources and Activities**

Impacts are the same as Alternative 2.



### **Impacts to Minerals and Mining**

Impacts are similar to Alternative 2 but approximately half as much acreage would be affected by requirements for plans of operation for small mining operations (under five acres).

### **Impacts to Vehicle Access**

Impacts are the same as Alternative 2.



## 4.5 BAT CONSERVATION IN THE SILURIAN HILLS

This amendment was developed to provide a strategy to manage representative habitat on public lands for sensitive bat species in the Silurian Hills. (Refer to Chapter 7, Figure 11 for a visual representation of the identified areas.)

### 4.5.1 ALTERNATIVE 1 (No Action) - Bat Conservation

#### Impacts to Wildlife

**General Wildlife:** Wildlife resources on affected public lands would continue to be managed under MUC M guidelines. These guidelines are based on a balance between higher intensity use and protection of public land resources. District, State and BLM-wide directives that address closure of mine shafts and adits would remain in effect. Sensitive biological resources would continue to potentially receive impacts from notice-level mining actions within 15 days after filing, giving less time for field exam and development of site-specific mitigation measures.

**Special Status Animals:** Protection of BLM sensitive and other bat species known to reside in wintering or nursery roosts within inactive mines would occur on a case-by-case basis as mining notices and other proposals are received. Present difficulties in responding in a short time with effective mitigation measures that minimize impacts to bats and other mine-dwelling wildlife would continue. Route designations would occur under MUC M guidelines. The use of route designation to effect route closures or seasonal restrictions for the benefit of bats and other mine dwelling wildlife would be limited by the current wildlife inventory base.

#### Impacts to Cultural and Native American Values

Current management practices will continue. Sensitive cultural resources would continue to potentially receive impacts from notice-level mining actions within 15 days after filing, giving less time for field exam and development of site-specific mitigation measures. No site-specific impacts to cultural resources have been identified. For other surface disturbing proposals, site-specific analysis and mitigation would occur prior to ground disturbing activities.

#### Impacts to Recreation Resources and Activities

Alternative 1 consists primarily of activities already identified in the CDCA Plan for the conservation and recovery of special status species and in follow-up implementation activities for sensitive wildlife, including specifically for bats. Application of existing CDCA Plan route designation to conserve special status species and natural communities results in minor impacts to vehicular access, and therefore, to recreation. Primary recreation activities that may be affected include caving, rockhounding, vehicle touring, rock climbing and shooting. In many instances, gates are put across adits to allow bats



and other wildlife to enter and leave, but restrict access to the general public and their recreational experience. No irreversible and irretrievable commitment of recreation resources will occur.

### **Impacts to Minerals and Mining**

Currently mining may occur on public lands in the affected area under MUC Moderate guidelines. These guidelines provide for smaller exploratory mining for locatables to occur with a minimum of environmental review, and proposals five acres and larger to be evaluated through environmental analysis, many within 30 days. No new impacts will be incurred through this alternative.

### **Impacts to Vehicle Access**

Alternative 1 consists primarily of activities already identified in the CDCA Plan for the conservation and recovery of special status species and in follow-up implementation activities for sensitive wildlife, including bats. In applying the regulatory criteria which minimize harassment of wildlife or significant disruption of wildlife habitats, it is reasonable to conclude that the same criteria proposed for development through the NEMO Plan to conserve special status bats and their natural communities would be applied during the route designation process with or without this planning effort.

## **4.5.2 ALTERNATIVE 2 - Bat Conservation**

### **Impacts to Wildlife**

**General Wildlife:** Wildlife species that inhabit caves and abandoned mines would benefit from mitigation measures, route designations, and other measures developed in the habitat management plan to conserve special habitat features. Among these species are ringtail, spotted skunk, Say's phoebe, barn owl, chuckwalla, and some invertebrates.

**Special Status Animals:** A habitat management plan (HMP) would be developed that implements management direction provided in BLM bat management policies. The HMP would identify standard mitigation measures for proposed mining and other surface disturbing activities and changes in route use (e.g., seasonal closures) to benefit bats and mine-dwelling wildlife. Bat habitat would benefit from a more deliberate and focused strategy for protecting caves and abandoned mines from unmitigated effects of activities.

The review period for site analysis and application of mitigation measures for bats would be increased from 15 days to 30 days resulting in more time to determine the measures that are applicable and appropriate.

### **Impacts to Cultural and Native American Values**

MUC change to L will enhance potential for identifying cultural resources associated with historic mining thereby providing additional opportunity for avoidance or



mitigation. Appropriate rehabilitation of historic period shafts and adits for bat habitat will enhance protection of any remnant cultural resources (historic period mining features). Site-specific analysis and appropriate mitigation would occur prior to ground disturbing activities. In addition, the HMP may identify biological mitigation measures for proposed mining and other activities that could mitigate cultural impacts.

### **Impacts to Recreation Resources and Activities**

Under Alternative 2, it is reasonable to expect that the HMP will identify some route restrictions. This may result in some caves requiring a longer walk to access or with seasonal restrictions on motor vehicle access, but the sought-after recreation activities will still be available. Additional site-specific restrictions on access to inactive mines could limit recreational opportunities for rockhounds and history buffs.

### **Impacts to Minerals and Mining**

Reclassification of 7,400 acres of public lands from Moderate to Limited would require an approved Plan of Operations prior to conducting any surface disturbing activities. Mining activity is expected to continue in the area. This would result in increase permitting times and costs for operations of five acres or less. Specific mitigation measures to be developed as part of the HMP would likely result in additional impacts, such as seasonal restrictions and installation of bat gates during mine closure. These impacts would be further evaluated during HMP planning.

### **Impacts to Vehicle Access**

This alternative would result in minor to moderate negative impact to vehicle access based on analysis and route closures and seasonal limitations identified during HMP planning. Additional public input and review would occur during site-specific planning.

## **4.5.3 ALTERNATIVE 3 (Preferred) - Bat Conservation**

### **Impacts to Wildlife**

**General Wildlife:** See the following discussion for Special Status Animals.

**Special Status Animals:** Impacts of this alternative are the same as Alternative 1 except: MUC M would be changed to L and provide for more time to conduct site-specific analysis and develop mitigation measures, and route designations would occur under MUC L guidelines and consider the needs of bats.

### **Impacts to Cultural and Native American Values**

MUC change to L will enhance potential for identifying cultural resources associated with historic mining thereby providing additional opportunity for avoidance or



mitigation. Appropriate rehabilitation of historic period shafts and adits for bat habitat will enhance protection of any remnant cultural resources (historic period mining features). Site-specific analysis and appropriate mitigation would occur prior to ground disturbing activities.

### **Impacts to Recreation Resources and Activities**

Impacts are the same as Alternative 2.

### **Impacts to Minerals and Mining**

Reclassification of 7,400 acres of public lands from Moderate to Limited would require an approved Plan of Operations prior to conducting any surface disturbing activities. Mining activity is expected to continue in the area. This would result in increase permitting times and costs for operations of five acres or less.

### **Impacts to Vehicle Access**

Impacts would be similar to Alternative 2 but may be less since route designation will not be looked at through an HMP.



## **4.6 RELEASED LANDS: MUC OF RELEASED WSA's**

### **4.6.1 ALTERNATIVE 1 (No Action) - Released Lands**

The CDCA Plan values and rationale for the original designation of MUC within released lands have been described in Appendix A of the Final Environmental Impact Statement and Proposed Plan (September, 1980), according to Planning Area (see Land Use Plan Map 1 insert with the CDCA Plan for Planning Area boundaries and designations). This alternative would result in a mixed mosaic with approximately 315,950 acres managed under MUC L guidance and 152,350 acres managed under MUC M guidance. (Refer to Chapter 7, Figure 5a for a visual representation of the identified areas.)

#### **Impacts to Vegetation**

There would be no direct impacts to vegetation from MUC management as described above. Impacts described from MUC management are indirect. No released lands addressed in this amendment were originally assigned MUC Intensive; the differences in alternatives are between different mixes of MUC Limited and Moderate. The major effect on vegetation is based on the handling of small mining notices. Within MUC M, exploratory (as opposed to development) notices under 5 acres are not a federal action, whereas within MUC L a plan of operations is required, which includes mitigation to protect natural resources, such as individual plants, sensitive plant communities (e.g., riparian and wash areas) and prevent the spread of exotic invasive weeds. Under the no action alternative, potential for negative impacts to occur would continue at the same level which means some vegetation may continue to receive impacts without the opportunity for mitigation of effects, and potential for beneficial impacts from avoidance and other mitigation would continue for activities five acres and larger.

There are also indirect beneficial impacts to resources from route designation under MUC L parameters, but these would be analyzed on a site-specific basis and can not be readily quantified with some exceptions. In particular, with respect to washes, resource values associated with washes would receive greater protection under MUC L parameters for route designation than under MUC M. From the standpoint of vegetation values, the No Action Alternative cumulatively would be less favorable than other Alternatives, which would provide for more released polygons to have routes designated under MUC L guidelines.

#### **Impacts to Wildlife**

There would be no direct impacts to wildlife. For indirect impacts see vegetation discussion above.

#### **Impacts to Soil, Water, and Air**

There would be no direct impacts to soil, water, and air. For indirect impacts see vegetation discussion above.



### **Impacts to Cultural Resources and Native American Values**

There would be no direct impacts to cultural resources and Native American values. For indirect impacts see vegetation discussion above.

### **Impacts to Utilities**

No new impacts to utility corridors would be expected from continued use of the existing MUC designation. There are no differences based on MUC designation in management of utilities within corridors.

### **Impacts to Minerals and Mining**

Under the no action alternative, potential for negative impacts to occur would continue at the same level, and potential for mitigation would continue at the same level. From the standpoint of exploration and mining, the No Action Alternative cumulatively would be more favorable than Alternative 2 or 3 which would provide for fewer released polygons to return to MUC M. The advantage would be the greater applicability of Notice level activity, including in areas with higher mineral potential. On a polygon-specific basis, the other alternatives may be preferable, depending on the MUC proposed (see Table 2-9 and 2-10).

### **Impacts to Vehicle Access**

The major effect on access that may occur as a result of Alternative 1, is the increased area of MUC M relative to MUC L. Within MUC M, existing routes are designated open unless specifically closed, whereas within MUC L an approved route network is identified. As with potential impacts to resource values, any impacts to access would be anticipated to occur at the site-specific level rather than at the landscape level. The actual impacts would generally be limited to areas with multiple access options or resource conflicts. In some portions of the Planning Area, access options are restricted by topography and the limited number of existing routes. Where flexibility does exist, MUC M could provide additional access. Within MUC M areas motorized access in washes may also be greater. Generally, the NEMO Planning Area does not have a substantial wash network, but there are released lands where washes do provide access, particularly in the lower elevations that connect to the larger riparian features. On a site-specific basis, therefore, route designation can be expected to result in fewer open routes on released lands identified as MUC L under this alternative.

## **4.6.2 ALTERNATIVE 2 - Released Lands**

Released lands will be designated consistent with the original CDCA Plan findings except in 17 locations where the MUC of the surrounding lands have been redesignated different than the original MUC (Alternative 1). A total of 401,400 acres of public lands released from wilderness review by Congress would be managed as Multiple-Use Class



Limited and 66,900 acres of public lands as MUC Moderate. See Table 2-10 in Chapter 2 for a list of the 41 released areas.

### **Impacts to Vegetation**

Impacts would be similar to Alternative 1 (No Action) except that the cumulative addition of 85,450 acres in MUC L would result in potential indirect beneficial impacts to vegetation on those lands, as discussed under No Action. On a parcel-by-parcel basis, this alternative would be potentially have fewer impacts to vegetation in 5 areas, and partially so in another 2 areas. It would have potentially higher impacts to vegetation in 8 areas, and partially so in another 2 areas.

### **Impacts to Wildlife**

There would be no direct impacts to wildlife. For indirect impacts see vegetation discussion above.

### **Impacts to Soil, Water, and Air**

There would be no direct impacts to soil, water, and air resources. For indirect impacts see vegetation discussion above.

### **Impacts to Cultural Resources and Native American Values**

There would be no direct impacts to cultural resources and Native American values. For indirect impacts see vegetation discussion above.

### **Impacts to Utilities**

Impacts would be the same as Alternative 1 (No Action).

### **Impacts to Minerals and Mining**

Impacts would be the same as Alternative 1 (No Action) except that the addition of 85,450 acres in MUC L would result in potential impacts to small exploratory mining activities on those lands, as discussed for other MUC L lands under No Action. On a parcel by parcel basis, this alternative would be potentially more mineral exploration friendly in 8 areas, and partially so in another 2 areas. It would be less mineral exploration friendly in 5 areas, and partially so in another 2 areas. Operations five acres and larger would be unaffected.

### **Impacts to Vehicle Access**

Impacts would be the same as Alternative 1 (No Action) except that the addition of 85,450 acres in MUC L could result in potential additional limitations to access during route designation on those lands, as discussed under No Action. On a parcel-by-parcel



basis, this alternative would be potentially more access friendly in 8 areas, and partially so in another 2 areas. It would be less access friendly in 5 areas, and partially so in another 2 areas.

### **4.6.3 PREFERRED ALTERNATIVE - Released Lands**

Released lands will be designated consistent with the original CDCA Plan findings except in 11 locations where the MUC of the surrounding lands have been redesignated and/or new data substantiate need. A total of 392,920 acres of public lands released from wilderness review by Congress would be managed as Multiple-Use Class Limited and 75,380 acres of public lands as MUC Moderate. See Table 2-10 in Chapter 2 for a list of the 41 released areas and the 11 that would be affected.

#### **Impacts to Vegetation**

Impacts would be similar to Alternative 1 (No Action) except that the cumulative addition of 76,970 acres in MUC L would result in potential beneficial impacts on those lands, as discussed under No Action. On a parcel by parcel basis, this alternative would be potentially more resource friendly in 5 areas than no action, and partially so in another 4 areas. It would be partially less resource friendly in 2 areas.

#### **Impacts to Wildlife**

There would be no direct impacts to wildlife. For indirect impacts see vegetation discussion above.

#### **Impacts to Soil, Water, and Air**

There would be no direct impacts to soil, water, and air resources. For indirect impacts see vegetation discussion above.

#### **Impacts to Cultural Resources and Native American Values**

Impacts are the same as Alternative 2.

#### **Impacts to Utilities**

Impacts would be the same as Alternative 1 (No Action).

#### **Impacts to Minerals and Mining**

Impacts would be the same as Alternative 1 (No Action), except that the addition of 76,970 acres in MUC L would result in potential impacts to small exploratory mining activities on those lands, as discussed under No Action. This alternative would be slightly more beneficial to mining than alternative 2 on a per-acre basis. On a parcel-by-paragraph-basis, this alternative would be partially more mineral exploration friendly in 2 areas than no



action. It would be less mineral exploration friendly than no action in 5 areas, and partially less so in another 4 areas.

### **Impacts to Vehicle Access**

Impacts would be the same as Alternative 1 (No Action). The addition of 76,970 acres in MUC L could result in potential additional limitations to access during route designation on those lands, as discussed under No Action. On a parcel-by-parcel basis, this alternative would be partially more access friendly in 2 areas. It would be less access friendly in 5 areas, and partially less so in another 4 areas.



## **4.7 GREENWATER CANYON ACEC DELETION PROPOSAL**

### **4.7.1 ALTERNATIVE 1 (No Action) - Greenwater**

#### **Impacts to Cultural and Native American Values**

Any currently undiscovered cultural resources would be afforded the highest level of protection. The area would continue to be managed under the existing ACEC Management Plan. Regular monitoring of resources would continue to occur by professional archaeologists and other resource specialists with archaeological training (e.g., Law Enforcement Rangers). Other protective measures would be provided if activities are proposed in the affected area. (Refer to Chapter 7, Figure 12 for a visual representation of the identified area.)

#### **Impacts to Recreation Resources and Activities**

This alternative will have no effect on motorized touring, since the area contains very few routes of travel. The area would continue to be managed as an ACEC and the ACEC Management Plan will provide the basic management direction. This plan includes a prohibition on camping within the ACEC so it does affect potential for overnight use of the area. Some potential for this type of recreation exists since it is located immediately adjacent to and north of Death Valley National Park.

#### **Impacts to Minerals and Mining**

Mineral activities in the area currently require plans of operation and special mitigation strategies to prevent impact to any important cultural or other natural resources.

### **4.7.2 ALTERNATIVE 2 (Preferred) - Greenwater**

#### **Impacts to Cultural and Native American Values**

No known sites would be impacted. As yet undiscovered cultural resources within the remaining portion of the existing ACEC that would be deleted by this alternative would be managed under MUC L. Site-specific analysis would occur prior to ground disturbing activities to avoid or mitigate potential impacts.

#### **Impacts to Recreation Resources and Activities**

Deleting Greenwater Canyon as an ACEC would result in somewhat increased recreational opportunity. The area will be managed under MUC Limited guidelines. There would be increased camping opportunities since under this alternative stopping, parking and camping would be allowed within 300 feet of routes (CDCA Plan Amendment, 1982).



**Impacts to Minerals and Mining**

Impacts are the same as Alternative 1. Lands requiring special mitigation strategies in the BLM ACEC Plan to prevent impact to any important cultural or other natural resources that would have affected mining are now located within Death Valley National Park boundaries.



## 4.8 ORGANIZED COMPETITIVE VEHICLE EVENTS

### 4.8.1 ALTERNATIVE 1 (No Action)

Alternative 1 (No Action) assumes that point-to-point competitive racing would continue on the designated race course in accordance with the provisions set forth in the California Desert Conservation Area Plan. The Barstow-to-Vegas Race Course would remain as delineated on the California Desert Plan Land Use Map and the text under the Competitive Events Section of the Recreation Element of the Plan would remain.<sup>6</sup> (Refer to Chapter 7, Figure 14 for a visual representation of the identified alternatives.)

The 1989 monitoring report for the Barstow-to-Vegas focused on course width restrictions, spectator controls, special flagging and disqualification procedures. Post race monitoring indicated a significant amount of non-compliance relating to these requirements which impacted numerous resources. The 1989 event was the most carefully planned in the history of the Barstow-to-Vegas by District 37. Of the 97 special stipulations for the 1989 permit, 23 (25%) were violated.

#### Impacts to Vegetation

**General Vegetation:** Impacts to vegetation communities would differ depending on course width, vegetation communities crossed, and frequency and timing of use. Direct impacts would consist primarily of loss of individual plants through crushing. Indirect impacts would include disturbance of soil structure supporting vegetation, promotion of weedy species through surface disturbance, loss of soil after loss of soil-holding cryptogamic crusts, loss of seeds in the soil, and reduction of soil moisture through compaction. Non-native invasive plants common to the region also pose an increased potential for larger fires. Large and repeated fires in an area can result in vegetative type conversion, with shrublands eventually becoming grasslands that can foster a fairly regular fire regime. Impacts are greatest at start and pit areas where vehicle use is intensive. Spectators are often widely dispersed along the course, and driving four-wheel and two-wheel vehicles off of the authorized route network can result in extensive disturbance of vegetation. Riders often visit the race area and practice on the course in the weeks before a race; rider control is very limited at this time.

Through repeated use, competitive event courses substantially widen as a result of racers straying from the course (1989 Barstow to Vegas Post Race Report 1/25/90 and EA CA-060-EA-90-01, Appendix II: Summary Monitoring Report Covering Races Held from 1983 through 1988). This widening of the course could have a substantial effect on vegetative composition along the route. Although most of these impacts (e.g., soil profile disruption and compaction, germination and cover site modification, and forb and shrub

---

<sup>6</sup> This alignment is no longer feasible due to the listing of the desert tortoise and establishment of the Mojave National Preserve. These changes in circumstances have made it impossible for the BLM to issue a permit for the race reasonably following the course shown on the California Desert Plan Land-Use Map as amended in 1982. See Findings of Fact and Conclusions of Law June 8, 1990 (U.S. District Court) (SA CV 90-267-JSL)



loss) would be limited to the event corridor itself, the potential for spread of invasive non-native plants and vegetative type-conversion would extend beyond the race corridor.

Data collected in areas outside desert tortoise habitat where the permitted course width was 100 feet showed that straying and course widening occurred. The course width in the area to the west of a pit area was measured at 260 feet and near Solomons Knob several transects noted race vehicle tracks over 90 feet outside the permitted course width.

The route in sections 6, 7 and 18 in T. 15 N., R. 10 E. is marked on an existing road that is 7-9 feet wide. Much of this road, especially south of the Wander Mine has numerous large corrugations, which appear to have caused departure of vehicles from the roadbed. In section 6, the zone of principal impact was locally widened to 40 feet. There is evidence of substantial motorcycle and 3-wheel ATV play off the road in all directions around the road junction at the Wander Mine, causing substantial shrub damage and road braiding.

As a result of shortcutting and overrunning in washes, the 1989 event caused extensive damage to vegetation and breakdown of wash banks. There is extensive tracking by motorcycles, 3- and 4-wheel ATVs, and 4-wheel vehicles outside the shallow borrow pit in which Pit 2 is located, especially on the east side. The tracks occur in the well-vegetated wash adjacent to the two small rock outcrops on the east side of the road, on the steep 6-10 feet high wash banks, and on the terrace above the wash. Slots to 8 inches wide and 10 inches deep were cut by motorcycles climbing the wash bank. Individual motorcycle tracks average 8.8 inches wide and 1.5 inches deep, which is equivalent to 1 acre of surface disturbance per 11.3 miles of travel, and about 24 short tons of soil displacement per mile (soil density assumed to be 1.6 gm/cc).

Impacts of dust accumulation on plants are another concern. Higher than normal levels of dust on leaf surfaces may reduce cooling efficiency of the plants and cause added stress. Levels of dust on leaf surfaces, growing points, and overall effects on plant production have not been studied.

**Special status plants:** Mitigation measures commonly applied would avoid races on routes traversing known habitat of special status plants. However, inventories of special status plants are incomplete.

**Biological Soil Crusts:** Crusts may be disturbed by tires (of both racers and spectators) that exert compressional and shear forces. The crust response to these disturbances is variable depending on soil moisture and depth of disturbance. Moist crusts are better able to withstand disturbances than dry soils. Many of the biological crust species are not mobile and cannot survive burial; burial can result in the loss of mosses, lichens, green algae and small cyanobacteria. The overall result of burial is a greatly simplified soil crust community. Within existing routes soil crusts are essentially absent; the greatest impacts would occur where vehicles leave the traveled route.



Even a single pass of the stray vehicles destroyed the lichen crust that is a principal surface stabilizer between shrubs in this area. Many deeply rutted parts of the route will capture runoff from crossing drainage channels. Where the route is in an active wash, the deep corrugations will trap runoff and prevent the wash from functioning as a runoff distributor.

**Riparian/Wetland:** Mitigation measures commonly applied would avoid races on routes traversing riparian or wetland areas where feasible. Where avoidance is not feasible MUC guidance and mitigation would be utilized consistent with fallback standards.

**Noxious Weeds:** The impacts are the same as impacts for Alternative 1 of standards and guidelines.

### **Impacts to Wildlife**

**General Wildlife:** Wildlife habitat values would be reduced where vegetation is disturbed (see General Vegetation discussion above). Loss of forage, changes in forage species composition, and loss of cover from predators and weather would result from disturbance of vegetation. In addition, animals can be run over above ground or below ground (burrow crushing). Soil compaction disrupts burrow suitability. Common, widely adaptive wildlife species could benefit from this habitat change, while rare, narrowly adapted species usually suffer. In general, it can be expected that biodiversity would be reduced along race routes where vegetation and soil disturbances and changes occur.

Wildlife activities would be disrupted in the short term. Disruptions would take place not only the race event but during pre-riding of the course as participants practice. The disrupting effects on animals would be largely a function of the season. The spring and summer are most critical when animals are breeding, nesting, and rearing young. Displacement during these seasons can result in reproductive failure for that year. Changes in behavior patterns could occur at any season; such changes could include departure from or avoidance of the area or attraction of scavengers.

Wildlife may be injured or killed by participant motorcycles or support vehicles during the race. Individual animals may be killed on roads leading to the start, finish, pits, and spectator areas by increased traffic associated with the event. Large species, such as coyotes and kit foxes, could be temporarily displaced during the event into adjacent areas. Less mobile species, such as rodents or species inactive at this time of the year (many reptiles), would be vulnerable to crushing or entombment due to burrow collapse. The effect of increased noise levels on small species has not been widely studied. There is controversy on the potential impacts of noise on wildlife.

Habitat degradation along off road portions of the course would reduce forage for herbivorous species, and could reduce populations of species with relatively small home ranges such as kangaroo rats (*Dipodomys spp.*).



Any food items and trash left along the course by spectators may also provide for temporary use of the area by opportunistic predators such as ravens and coyotes. Increased predation rates on wildlife prey populations may also result.

Strategies to minimize the potential for impacts to wildlife and vegetation include rider education, course marking, special habitat avoidance, habitat reclamation, seasonal restrictions, and event design changes.

**Special Status Animals:** Where events pass through habitat of a listed animal, there is the potential for a taking through harm or harassment. The desert tortoise has the most extensive range of any listed species in the desert, and its habitat is difficult to avoid in race course selection. The B-to-V passes through extensive portions of Category I desert tortoise habitat (also critical habitat); some other areas of tortoise habitat serve as linkages between major tortoise populations.

Habitat loss for special status animals, especially desert tortoise, are a result of factors described in the discussion of General Vegetation above. The wider a competitive event race course becomes, the greater the potential impacts and likelihood of significant population effects. Heavily used route corridors provide for invasion of weedy species, which in turn may result in type-converted areas that provide reduced cover for hatchling and juvenile tortoises, making them susceptible to predation and death from exposure. The results are areas of reduced tortoise density.

Strategies to minimize the potential for take (especially for desert tortoise) include rider and spectator education, course marking, habitat damage reclamation, seasonal restrictions and “clearing” or physically removing tortoises from the race course immediately before and during the event by trained biological monitors. Sometimes spectators are restricted, but compliance has been low because of the difficulty in controlling people over a large area. Many of the mitigation measures have been ineffective based on limited BLM law enforcement resources available to prevent pre-riding in and around the course.

Desert tortoises may be subject to both direct and indirect impacts associated with race activities. In the context of this analysis, a direct impact is defined as the killing, injuring or handling of tortoises and/or the disturbance or crushing of tortoise burrows by actions of participants in the event (racers, pit crews, spectators, etc.). Individual tortoises could be injured or killed by motorcycles during the race, or by support and spectator vehicles. Tortoises may also be crushed by collapse of burrows. Any tortoises coincidentally active at the time of the event could be subject to vandalism or collection. Potential for tortoise activity during this time of year is low, but could occur if temperatures are unseasonably warm or if rainfall occurs immediately prior to the race. Generally, the likelihood of direct kills or injuries to tortoises by being hit by a race vehicle or spectator vehicle is relatively low. Direct impacts on the tortoise from the crushing of burrows is more likely. Barricade flagging of identified tortoise burrows and continuous ribboning where there is evidence of tortoise presence is expected to be partially effective in reducing direct impacts to burrows. Such measures would not assure the prevention of



direct impacts to burrows and possibly tortoises. In the 1989 race, 3 of the 12 flagged burrows in the Stateline Resource Area, Nevada, were impacted by racers. There is also concern that, despite careful pre-race inspections, all burrows which are potentially at risk would not be discovered and, therefore, flagged. Several unflagged burrows were discovered during the 1989 post-race monitoring.

The extent of habitat disturbance is a key consideration in assessing the indirect impacts of this race on the desert tortoise. The proposed 100-foot wide race corridor except in areas where there is evidence of desert tortoise and on roads and through washes. A 60-foot corridor would be established in areas where there is evidence of tortoise. The stipulated course through desert tortoise habitat in 1989 was only 25 feet. Monitoring of the 1989 race showed that the average width of the disturbed area in tortoise habitat was 55 feet - or 6.6 acres actually disturbed per mile.

Based on the results of monitoring the effectiveness of past race stipulations to constrain riders within a corridor width, it is likely that adverse impacts to the desert tortoise and its habitat by straying and course widening would occur. The increased width would encourage future OHV use, which could result in the increased take of tortoises and additional loss of tortoise habitat. Additionally, the widening of the course may contribute to habitat fragmentation.

The transect data through tortoise habitat showed that straying extended out from the corridor boundaries an average of 30 feet. An analysis of the data (transect data, photographs, and BLM staff observations) indicated that the corridor flagging was not effective at minimizing the straying of vehicles.

Six possible tortoise burrows were observed, of which three appeared to be active; I made no special search for burrows. None of the burrows was marked and one burrow was closer than 10 feet to the main race route. (Personal observation of the 1989 event from Howard Wilshire from USGS. He has monitored the B-to-V since 1974 as part of his studies of surface processes in arid lands. His observations were made before, during, and after the November 25, 1989 race on a 3.8 mile cross-country segment in desert tortoise habitat, and on December 1-2, in the Baker, West of Baker, Turquoise Mtn., Solomons Knob, and Valley Wells 7.5' quadrangles.)

In several wash routes, unmarked possible tortoise burrows (none were clearly active) were observed in the areas of heavy impact. Unidentified burrows located in the vicinity of Pit 2 were crushed by single motorcycle and ATV passes.

The data collected throughout the Barstow Resource Area desert tortoise habitat indicated that corridor flagging was ineffective in restricting racers to within the stipulated corridor width. The resulting course was two to three times the stipulated width with additional trails and individual tracks established well outside the main trail.

Effects on listed species would depend upon species biology and behavior and race factors (e.g., season, number of participants, speed). Sensitive species such as bighorn



sheep, burrowing owls and bats, are likely to be impacted (ranging from temporary displacement from habitat to complete area avoidance). Effects are likely greatest where courses come near springs, yucca stands, boulder fields, caves and mines, and other special habitat features. For bats and bighorn sheep, all seasons are critical.

### **Impacts to Soil, Water and Air Resources**

**Soil:** Soil disturbance and removal of vegetation associated with use of a competitive race course would result in increased wind and water erosion of affected soils. Reduced soil permeability and water storage potential and compaction within the race course would also occur with such use over time. Levels of impact would differ depending on soil type, slope, allowed race course width, specific race course segment and alignment, and frequency and timing of use. Some soils are affected to a higher degree seasonally, and all soil impacts become magnified at course turns and corners. On occasion, “artificial washes” are formed due to soil erosion and altered water drainage along competitive race courses, particularly on the steeper grades. Over time, this erosion can lead to soil incision, where deep gullies are formed or this impact can fan out over the landscape in a series of shallower “rill” gullies. Road grading activities, over time, can minimize or accentuate this soil incision and erosion, dependent upon road segment circumstances and grading techniques used.

Vehicles would cause surface compaction and displacement of surface soils along the course and at all pits. Soil impacts associated with past events were determined to be a reduction in desert pavement coverage and increased development of soft, powder-like materials is very susceptible to wind and water erosion. Field investigation has determined that over the years this race has been run, approximately 2,000 acres of desert habitat have been disturbed annually. Some of this annual disturbance is to new areas (course changes) but the majority of impacts are to the existing course. Soil nutrient levels are expected to decrease over the long term due to the removal of the vegetative cover, from the churning of the soil surface by race traffic, and through the mixing of nutrient poor soils with the more fertile soils associated with “plant islands.”

The width of the principal zone of impact is 170 feet across Silver Dry Lake. Use of Silver Dry Lake caused disruption of the silt-clay crust, making the surface vulnerable to wind erosion.

As a result of shortcutting and overrunning in washes, the 1989 event caused extensive damage to vegetation and breakdown of wash banks. Individual tracks between heavily used braids average 8.7 inches wide and 1.7 inches deep, which is equivalent to 1 acres of surface disturbance per 11.4 mile of travel, and 27 short tons of soil displaced per mile (soil density assumed to be 1.6 gm/cc).

There is extensive tracking by motorcycles, 3- and 4-wheel ATVs and 4-wheel vehicles outside the shallow borrow pit in which Pit 2 is located, especially on the east side. The tracks occur in the well-vegetated wash adjacent to the two small rock outcrops on the east side of the road, on the steep 6-10 feet high wash banks, and on the terrace above the



wash. Slots to 8 inches wide and 10 inches deep were cut by motorcycles climbing the wash bank. Individual motorcycle tracks average 8.8 inches wide and 1.5 inches deep, which is equivalent to 1 acre of surface disturbance per 11.3 miles of travel, and about 24 short tons of soil displacement per mile (soil density assumed to be 1.6 gm/cc).

**Air Quality:** Such events cause a temporary increase in the amount of oxidants and carbon monoxide along the course. The increase in gaseous matter within the air basins is not considered significant. However, great quantities of dust and particulates are often suspended in the air near the start of such competitive events and anywhere riders stray from the course.

Air quality standards would be temporarily exceeded based on measurement of total suspended particulates. This violation would be temporary and not an unusual event in the wind blown areas of the desert. Temporary increases in the amounts of oxidants and carbon monoxide on all portions of the course are expected. Although the air quality reduction is temporary, significant impacts from these particulates to spectators, participants, support personnel, and other recreational users in the race area are likely to occur. The atmosphere surrounding the event would be impacted by the generation of dust and temporary emissions result in a short-term (approximately 14 hours) reduction in air quality. Dust was found to be a major contributor to off-course straying due to impairment of rider visibility.

Especially apparent in the Kingston Wash area was the considerable dust raised by the passage of motorcycles and ATVs and subsequent settling of the dust up to 150 yards from the course. In area of desert pavement, this created a noticeable visual contrast between the dark pavement beyond the dusting effect and the affected areas closer to the course.

Mitigation strategies could include mandating the use of existing routes within the race course for events, active rehabilitation of straying and erosion impacts following events and maintenance of a single course within the race course for events.

### **Wilderness**

Unanticipated impacts have affected WSAs during past Barstow-to-Vegas events and would probably impact designated Wilderness Areas today. These impacts have been in the form of shortcutting and intrusion in areas where the course utilized roads along the boundaries of WSAs.

The area outside of Pit 1, showed fresh tracks in Wilderness Study Area 242 (now known as the Soda Mountain Wilderness Study Area) of which the major part of the race traffic was actually in WSA 242 on the dry lake surface.



### **Impacts to Cultural and Native American Values**

There are no known impacts to cultural resources or Native American values. Undiscovered sites within or adjacent to event routes may be impacted. Prior to permitting routes are surveyed for potential effects to cultural resources and these surveys may result in reroute of the event. Unsurveyed areas adjacent to routes could be subject to impact from vehicles that stray from the course.

### **Impacts to Cattle Grazing (and Allotments)**

There may be short-term disruption of on-going grazing activities in areas where races are authorized through lease areas. The potential affect would depend upon level of and types of concurrent grazing activities. Range improvements within or adjacent to event routes may be impacted if a point-to-point motorcycle vehicle event is authorized through or within an allotment. These impacts can be mitigated through close coordination with the grazing lessee including following his instructions concerning closure of gates and avoidance of high-use areas.

### **Impacts to Recreation Resources and Activities**

The last Barstow-to-Vegas motorcycle race occurred in 1989; however, there are requests to reestablish this event. Although the CDCA Plan provides for competitive vehicle events, it is unlikely that such events would be permitted on the remnants of this course as identified in the CDCA Plan given past experiences with these events and the potential for adverse impacts to the desert tortoise and its habitat. With adequate funding and personnel, some shorter length competitive event may be viable, although it would include only portions of the existing race course, and would require identification of suitable start and staging areas on private lands.

Competitive events can be allowed in accordance with MUC and Recreation Element guidelines. Given the expanse of designated wilderness and critical habitat for the desert tortoise, it is difficult to locate a suitable race course in the NEMO Planning Area. In addition, the review process under NEPA (1969) and the Endangered Species Act would require considerable time and result in an uncertain outcome. Planning for competitive events therefore is difficult at best. A viable competitive event outside of OHV open use areas has not occurred in recent years because of resource conflicts, problems with course location and the amount of skilled and technical labor costs necessary to hold such an event in an environmentally sound manner.

Recreationists would have the opportunity to participate in the race since the termination of the race in 1990. Many spectators would have the opportunity to watch the event.

The use of the BLM ranger staff for race monitoring and enforcement activities would reduce law enforcement and visitor services in other areas. Resource protection, law enforcement, and safety/rescue operations would be diminished throughout the desert area on one of the busiest holiday weekends.



Casual and dispersed recreation uses in the vicinity are likely to be disrupted during the running of the race. Use of lands in and around the area of the race would suffer some access problems. Noise levels from the race would disturb the solitude in areas within a few miles of the course. Dust pollution may deter scenic values for the duration of the one-day event, and camping may be more crowded in the vicinity of Clark Mountain and Valley Wells/Cima area.

### **Impacts to Vehicle Access**

No additional vehicle access would be provided with this alternative. The condition of some open routes used for transportation purposes located in proximity to, or forming, a race course could become degraded over time as a result of competitive events and spectator visitation. The severity of this impact would depend upon the nature of the competitive event, i.e., motorcycle or ATV quad, allowed race course size, specific race course segment, and frequency and timing of use. The degree of open route maintenance associated with this alternative is anticipated to be higher than other alternatives.

In summary, course width exceeding stipulated widths occurred throughout the length of the course. These types of impacts were significantly greater than anticipated and stipulated. As a result of shortcutting, braiding, and travel off existing routes, new route spurs were created and may encourage unauthorized use into wilderness areas and other fragile undisturbed areas.

The width of the zone of principal impact (including all heavily used braids) ranged from about 10 feet to 140 feet. Course widening (over the width of the active wash or 25 feet, occurred at sharp turns in the active wash, and at places either just behind or in front of deep corrugations (estimated amplitudes to more than 1 foot) in the flagged route. The 1989 race substantially enlarged pre-existing corrugations (from previous races) and created new ones. Widening of the flagged route occurred whether or not construction ribbon was placed to discourage it. As a consequence, substantial new damage was done to vegetation and animal burrows.

The route in sections 6, 7 and 18 in T. 15 N., R. 10 E. is marked on an existing road that is 7-9 feet wide. Much of this road, especially south of the Wander Mine has numerous large corrugations that appear to have caused departure of vehicles from the roadbed. In section 6, the zone of principal impact was locally widened to 40 feet. There is evidence of substantial motorcycle and 3-wheel ATV play off the roads in all directions around the road junction at the Wander Mine, causing substantial shrub damage and road braiding.

Between the desert tortoise habitat and Pit 1, areas exhibited straying of up to a total of 280 trails average between 3 and 10 feet wide. The actual course utilized by the majority of racers averaged 160 feet wide. The minimum course width measured through this area was 108 feet and the maximum - 260 feet.

At Silver Lake, the majority of racers left the course and drove across the dry lake parallel to the course, Silver Lake Road. The road width averaged 30 feet berm to berm



and the course actually utilized by the racers averaged 146 feet. Straying extended out an additional 71 to 142 feet an average of 114 ft.) from the actual course.

In one area where racers were restricted to the road surface between berms, at sharp corners, racers severely shortcut the corner despite the presence of a race marshall.

Placement of placards, appeared to be spaced at distances too great to adequately define the corridor boundaries. As such, these control measures were ineffective. Generally, where opportunities to shortcut the course or avoid washboard were available, numerous racers took advantage of these opportunities thereby widening the course beyond its stipulated width.

Between this unnamed wash and Kingston Wash, the course proceeded along a dirt road. Little straying outside the course boundaries were observed in this section. However, once the racers entered Kingston Wash, another portion of the course identified for corridor flagging, considerable straying occurred. As in the previous wash, course control markings were sporadic and ineffective. Numerous racers once again ignored the flagging and placards to choose the fastest route available.

### **Impacts to Socioeconomic**

Adverse impacts from Alternative 1 (No Action) are considered negligible. The Barstow to Vegas competitive event has not been run for over ten years. Should such an event be held, communities along the course, particularly in Barstow and Baker, could incur some economic benefit from the sale of goods and services to participants, their families, and to spectators. The past event has attracted up to 5,000 individuals. A similar economic benefit is currently provided with the non-competitive dual sport events currently being authorized. However, a slight degree of increased economic benefit over the current baseline, from the sale of goods and services to participants, would likely be provided with this alternative.

Contacts with city governments and local businesses in the affected environment indicate few adverse impacts. The Barstow Chamber of Commerce had an annual income from retail sales taxes of \$278,231,000 for 1989. They estimated that the Barstow-to-Vegas event brings approximately \$300,000 to the city's economy. The Baker Chamber of Commerce and Stateline (Primm) casinos estimate that levels of funds generated from this event (\$10,000 for Baker and \$50,000 for Stateline (Primm)) contribute only a minimal amount to their city's annual income. These small communities are situated along I-15 and derive their income from tourists and travelers stopping for gas, food, or rest. The rooms at the Stateline (Primm) casinos are usually booked for all holidays and weekends throughout the year.

District 37 estimates that each racer spends approximately \$910 on this event, much but not all in adjacent communities. This includes expenditures on bike race preparation, entry fee, fuel, lodging, food and gambling. Pit crewmembers are estimated to spend about \$600 each on food, fuel, lodging and gambling. About \$102,000 is earned by the



club from this race. This income is a major contribution to other competitive events held by District 37 in the Southern California area.

#### 4.8.2 ALTERNATIVE 2

Amend the California Desert Conservation Area Plan to:

- a) Remove delineation of the Barstow-to-Las Vegas Race Course from the Land Use Map of the California Desert Conservation Area Plan, (1980 as amended).
- b) Replace the text in the section titled Organized Competitive Vehicle Events under the Recreation Element of the CDCA Plan with: Competitive vehicle events may only be held in MUC I with an area designation of "Open".
- c) Amend the MUC Guidelines to delete all reference to organized competitive vehicle events in MUC L and M, under recreation.

#### Impacts to Vegetation

**General Vegetation:** Crushing of vegetation along courses by riders, spectators, and pre-event riders would not occur. Changes in species composition resulting from disturbance and compaction of soil, destruction of microbiotic soil crusts, disruption of the seed bed, introduction of weedy plant species, and subsequent increases in fire frequency and size would be reduced.

**Special Status Plants:** The risk of damage to special status plants or their habitat from riders, spectators, and pre-event riders would be removed.

**Biological Soil Crusts:** Disturbance of soil crusts from riders, spectators, and pre-event riders would not occur.

**Riparian/Wetland:** Impacts are the same as Alternative 1.

**Noxious Weeds:** The impacts are the same as the impacts for Alternative 2 of standards and guidelines.

#### Impacts to Wildlife

**General Wildlife:** This alternative would benefit wildlife species as disturbance and mortality from the events and associated spectator and pre-riding activities would be removed. Removal of racing would allow for continued soil and vegetation recovery in many areas along the B-to-V course. Degradation of habitat along race courses would not occur. These and other effects described more fully in Alternative 1 would not occur. Some areas of the B-to-V course may need active reclamation techniques in order to repair soil damage, eliminate erosion gullies and restore vegetative cover. Some increase



in disturbance of wildlife and habitat might occur in OHV open areas if more races are added there; however, wildlife values are low in OHV open areas.

**Special Status Animals:** This alternative would benefit the desert tortoise and possibly other special status animals by removing direct mortality from runovers and by facilitating continued soil and vegetative recovery. The reduced potential for vegetative type-conversion associated with spread of weedy species and wildfire would similarly benefit the desert tortoise indirectly over the long term. Only slight, if any, increases above current levels of desert tortoise impact would be anticipated within OHV open areas.

#### **Impacts to Soil, Water and Air Resources**

By removing the possibility of permitting such an event outside of designated OHV open use areas, soil improvement would continue to occur unimpeded along the designated competitive race course. Some areas of the B-to-V course may need active reclamation techniques in order to repair soil damage, eliminate erosion gullies and restore vegetative cover. Continued moderate increases in soil and short-term air quality impacts would be anticipated within the OHV open use areas as a result of displaced racing activity.

#### **Impacts to Cultural and Native American Values**

No Impacts.

#### **Impacts to Cattle Grazing (and Allotments)**

No Impacts

#### **Impacts to Recreation Resources and Activities**

Deletion of the Barstow-to-Vegas course from the CDCA Plan would have minimal adverse affects to opportunities for competitive vehicle events compared to Alternative 1. If the Barstow-to-Vegas race is deleted and no provisions are made for competitive vehicle events except in OHV open areas, potential opportunities for this form of recreation could be diminished.

#### **Impacts to Vehicle Access**

Impacts are the same as Alternative 1 except the degree of open route maintenance located in proximity to the B-to-V race course is anticipated to be lowest of all alternatives presented.

#### **Impacts to Socioeconomic**

Communities along race courses, particularly Barstow and Baker, would lose some economic benefit from the sale of goods and services to participants, their families, and to



spectators. When it was run prior to 1990, the largest event, the B-to-V, attracted up to 4,000 to 5,000 individuals.

The race has been a major fundraiser for District 37 of the American Motorcycle Association and has provided funds to acquire liability insurance for other event sponsored by small affiliated clubs. The annual non-competitive dualsport event run along a similar course has partially replaced this economic benefit.

#### **4.8.3 ALTERNATIVE 3:** Amend the California Desert Conservation Area Plan to:

- (a) Remove delineation of the Barstow-to-Las Vegas Race Course from the Land Use Map of the California Desert Conservation Area Plan, (1981 as amended).
- (b) Delete the following text from the section titled “Organized Competitive Vehicle Events” under the Recreation Element of the Plan: ...and one motorcycle race course. (The Barstow-to-Vegas Motorcycle Race Course is established running from Alvord Road to Stateline. See Supplemental information.)

This action would amend the Multiple Use Class Guidelines and the Recreation Element of the CDCA Plan to include the following additional criteria for point-to-point motorized vehicle events on all lands outside of Open Areas:

- 1) Limit travel to routes designated as open. The race course would be limited to route width and further narrowed where there are adjacent sensitive resources at risk.
- 2) Start areas shall be located in Multiple Use Class I or on private land, with landowner’s permission. Finish and spectator areas shall be limited to suitable sites in classes M, I or on private land, with landowner’s permission. All pit areas shall be limited to support crews.
- 3) The event shall not be permitted in wilderness areas, ACECs; critical habitat as designed by USFWS, identified cultural resource sites or districts, riparian areas, and other sensitive soils and habitat areas. The event shall not be permitted on historic trails and roads that are on or eligible for the National Register of Historic Places, designated National Historic Trails or other specified trails or routes.
- 4) Written permission from property owners to cross private property shall be provided to the BLM.
- 5) Permit stipulations shall be prepared for each event covering monitoring activities, reclamation plans, insurance, enforcement, penalties, race course alignment and markings, and other standard permit requirements.



- 6) The race shall be managed under timed-start conditions and participation limited to motorcycles and ATVs. Start waves would be limited to 25 riders or less, with a total maximum number of 500 riders.

### **Impacts to Vegetation**

**General Vegetation:** Within DWMAs, impacts would be the same as Alternative 2. Impacts would be similar to those described in Alternative 1 outside of DWMAs, but important sensitive plant communities would be avoided.

**Special Status Plants:** Impacts would be similar to those described in Alternative 1 outside of DWMAs and within DWMAs impacts would be the same as Alternative 2.

**Biological Soil Crusts:** Impacts would be similar to those described in Alternative 1 outside of DWMAs, but sensitive areas would be avoided.

**Riparian/Wetland:** Impacts are the same as Alternative 1.

**Noxious Weeds:** Impacts are the same as impacts to Alternative 2 of standards and guidelines.

### **Impacts to Wildlife**

**General Wildlife:** Within DWMAs, impacts would be the same as Alternative 2. Impacts would be similar to those described in Alternative 1 outside of DWMAs, but important wildlife habitat would be avoided.

**Special Status Animals:** Impacts would be similar to those described in Alternative 2. Exceptions would be desert tortoise habitat outside of DWMAs. Thus, areas of lower tortoise density including linkages between tortoise management areas could continue to receive impacts. Special habitat features (e.g., caves, abandoned mines) that have not been identified would remain at risk for disturbance of resident species.

The criteria for any competitive event outside of OHV open areas would leave few routes available for racing. Segments of the B-to-V course that do not meet the criteria would continue recovery from past events. Recovery of desert tortoise habitat along segments of the B-to-V course that meet these criteria would be slowed, halted or reversed with renewed competitive event use.

Limiting the event to “timed starts,” permitting them only within the inactive tortoise season, and using existing roads would minimize the short-term potential damage to tortoises and their habitat. Some tortoise habitat, including potentially occupied burrows, could be damaged if vehicles stray from the course and by human activity at the start, finish and pit areas. Additional impacts would occur from spectators and pre-event riders, especially where they leave approved routes of travel. Take could occur if animals stray onto the course, though this would be greatly minimized by restricting such events



to the inactive tortoise season. Avoidance of critical tortoise habitat and active tortoise seasons, clearing the course before the event, and the use of spotters or snow fencing at specific high burrow density sites during the event would greatly minimize the potential for take of tortoises.

### **Impacts to Soil, Water and Air Resources**

Impacts are the same as Alternative 1.

### **Impacts to Cultural and Native American Values**

Impacts would be the same as Alternative 1 (No Action).

### **Impacts to Cattle Grazing (and Allotments)**

Impacts would be the same as Alternative 1 (No Action) in any areas where an event is permitted within an allotment.

### **Impacts to Recreation Resources and Activities**

Impacts from the deletion of the Barstow-to-Vegas Race Course in the CDCA Plan would be the same as Alternative 2. This alternative would allow for resumption of long distance point-to-point events outside of open areas and would minimize adverse impacts to sensitive resources using MUC and Recreation Element guidelines, as modified. The actual impacts are based on: (1) the degree that interest in sponsoring such an event outside open areas is expressed in the form of an application to the BLM and, (2) the potential success of such applications.

Applications would be considered in light of MUC guidelines and the additional Recreation Element conditions as proposed under this alternative. The requirement of "timed" starts and limitation of course width to existing routes would, thereby precluding a mass start, would set additional parameters on the racing experience. As with other alternatives, processing the application would likely take considerable time with an uncertain outcome based on identified resource conflicts in the NEMO Planning Area.. Sponsors would necessarily be required to initiate the application process well in advance of the proposed date of occurrence, and must refrain from publicizing the event until such time that a permit is approved.

### **Impacts to Vehicle Access**

Impacts are similar to Alternative 1, no additional vehicle access would be provided with this alternative. However, the condition of some open routes used for transportation purposes located in proximity to, or forming, the corridor meeting established criteria, could become degraded over time as a result of competitive events and spectator visitation. The severity of this impact would depend upon the nature of the competitive event, i.e., motorcycle or ATV quad, allowed corridor size, specific corridor segment,



and frequency/timing of use. The degree of open route maintenance associated with this alternative is anticipated to be higher than Alternative 2 and 4, but less than Alternative 1.

### **Impacts to Socioeconomic**

Impacts are the same as Alternative 1.

## **4.8.4 ALTERNATIVE 4**

This alternative would designate a replacement Barstow-to-Vegas Race Course to allow one event per year that would avoid critical desert tortoise habitat, ACECs, wilderness areas and other sensitive resources consistent with criteria identified in Alternative 3. The alternative alignment (Chapter 7, Figure 14) evaluated follows the Kingston Wash wilderness corridor north of the current alignment. A number of other alignments were considered and dismissed from further consideration because they crossed wilderness or other sensitive areas such as ACECs or critical habitat for listed species.

The additional criteria for point-to-point events outside of open areas would be the same as Alternative 3 except that:

- (1) Where there is no evidence of sensitive resources, the course may be expanded to as much as 100 feet, in specified areas as identified in the permit, at the discretion of the Authorized Officer.
- (2) This alternative would also allow the course to pass through an ACEC on a designated open route provided that the ACEC Management Plan clearly states that the route may be utilized for the named event and all other conditions identified in the ACEC Plan are met.

The Kingston Wash is a narrow wash adjacent to sensitive areas through which the course would pass (e.g., tortoise and bighorn sheep habitat and wilderness). This alignment results in several resource conflicts that would have to be resolved or avoided through subsequent site-specific analysis. Assuming that an acceptable alignment could be located to avoid category I and II tortoise habitat, sensitive cultural sites, and other sensitive resources, the following impacts are likely:

### **Impacts to Vegetation**

**General Vegetation:** Impacts are the same as Alternative 3.

**Special Status Plants:** Impacts are the same as Alternative 3.

**Biological Soil Crusts:** Assuming that a route could be found that meets the criteria, the effects would be similar to Alternative 3.

**Riparian/Wetland:** Effects to riparian and wetland habitat may be difficult to avoid through Kingston Wash. Substantial mitigation and avoidance strategies would be



necessary. Past dualsport activities have resulted in some impacts to wash riparian habitat.

**Noxious Weeds:** Impacts are the same as Alternative 2 of standards and guidelines.

### **Impacts to Wildlife**

**General Wildlife:** Effects would be similar to Alternative 3 but additional impacts to riparian habitat are likely.

**Special Status Animals:** Effects would be similar to Alternative 3, except the following impacts are particular to the Kingston Wash route. Impacts on tortoise are similar to those described in Alternative 3, except there is a higher potential for take of the desert tortoise by a competitive event held in a narrow wash such as Kingston. Though not designated as critical habitat for the species, this wash may act as an important habitat linkage between East and West Mojave desert tortoise populations.

### **Impacts to Soil, Water and Air Resources**

Impacts are similar to Alternative 3. Kingston Wash soils have a relatively low potential for wind erosion in comparison to the original Barstow-to-Vegas course, along the Boulder Corridor.

### **Impacts to Cultural and Native American Values**

Impacts may occur along the Kingston Wash corridor that contains two known sites that may be eligible for listing in the National Register of Historic Places and that may be of great concern to Native Americans. Under this alternative no protection is offered to historic routes and trails that have been determined to be eligible for listing in the National Register of Historic Places, or that may be determined eligible in the future.

Impacts would vary depending upon the number of racers per start and the total number of racers per event. They would also vary depending upon which routes within ACECs are available for use. Impacts to cultural resources on or adjacent to some of the routes in this alternative for a competitive motorized event may be significant. Unsurveyed areas would also be subject to impacts from vehicles that stray from the course.

### **Impacts to Cattle Grazing (and Allotments)**

This revised alignment would result in less potential disruption to cattle grazing than the current corridor. If permitted, there may be continued disruption of on-going grazing operations and associated activities during the event and the unknown periods before and after the event for preparation and cleanup.



### **Impacts to Recreation Resources and Activities**

Impacts are similar to Alternative 3, but approval of the course would result in additional restrictions associated with protection measures for wilderness, T&E and riparian resources, including speed limits and additional check points during the race.

### **Impacts to Vehicle Access**

Impacts are similar to Alternative 3. However, the degree of open route maintenance associated with this alternative is anticipated to be higher than Alternative 2, and less than Alternative 1 and 3.

### **Impacts to Socioeconomic**

Impacts are similar to Alternative 1 except for the increased cost associated with running the activity in the Kingston Wash.

## **4.8.5 Alternative 5**

Amend the California Desert Conservation Area Plan to:

- a) Remove delineation of the Barstow-to-Las Vegas Race Course from the Land Use Map of the California Desert Conservation Area Plan, (1980 as amended).
- b) Replace the text in the section titled Organized Competitive Vehicle Events under the Recreation Element of the CDCA Plan with: Competitive vehicle events may only be held in MUC I with an area designation of "Open" or on specified recreation routes which have been delineated and designated in the CDCA Plan.
- c) Amend the MUC Guidelines to delete all reference to organized competitive vehicle events in MUC L and M, under recreation.

### **Impacts**

The impacts of this alternative within the Dumont Dunes off-highway vehicle "Open" area would be the same as Alternative 1 for all resources. The impacts in all other areas of the NEMO Planning Area would be the same as Alternative 2 for all resources.



## 4.9 MOTOR VEHICLE ACCESS: ROUTES OF TRAVEL DESIGNATION

### 4.9.1 Alternative 1 (No Action)

#### Impacts to Vegetation

**General Vegetation:** Plants and plant communities in the Planning Area can be extremely fragile in nature and subtle in appearance. These characteristics lend themselves to inadvertent damage or destruction by vehicles, as well as activities associated with vehicle travel. Although plants such as creosote, jojoba and yucca are large bushes, unusual assemblages or features are often difficult to discern. When sensitive vegetation is localized and situated adjacent to routes, a high potential exists for supporting soil and plant damage.

There is potential for weed establishment and fire occurrence, that could impact small numbers of sensitive vegetation adjacent to designated open routes. However, there is low potential for large-scale vegetative type conversion affecting identified sensitive vegetation, in connection with the latter two impacts, in specific areas.

**Special Status Plants:** No new direct impacts of an adverse nature to sensitive vegetation are anticipated to occur as a result of No Action. Indirect adverse impacts to sensitive vegetation of this planning unit would include the potential for minor vehicle travel, parking, camping and intentional route proliferation-related soil disturbance in proximity to currently designated open routes (that over time can be substantial in terms of soil erosion/loss in the immediate vicinity of specific plant populations).

**Biological Soil Crusts:** It is thought that the low to mid-elevation arid ecosystems in the west developed with low levels of surface disturbance. Crust response to disturbance is highly variable. Cyanobacteria are the most resistant to disturbance, are highly mobile and can recolonize disturbed surfaces rapidly. Lichens vary in resistance based on type. Mosses have a high susceptibility to disturbance. Lichens and mosses are susceptible to burial. Disturbance results in reduced lichen and moss cover by burial, and cyanobacteria may increase and replace the lichens and mosses decreasing the species diversity. Biological crusts on sandy soils are less susceptible to disturbance when moist or wet. Clay soils are less susceptible to disturbance when crusts are dry. Site specific impacts to biological soil crusts may occur. When impacted sites are identified appropriate management action will be taken to protect impacted sites.

**Riparian/Wetlands:** A few springs located throughout the Planning Area have all been influenced over the years by vehicle use, camping, parking and route proliferation in their proximity.

**Noxious Weeds:** The only known direct impact to invasive non-native species as a



consequence of the No Action Alternative would be the potential facilitation of exotic plant establishment and spread over time, along the road shoulders of designated open and limited use routes. Impacts are considered negative overall and wide spread in occurrence.

### **Impacts to Wildlife**

**General Wildlife:** The type, intensity and frequency of vehicle use on specific routes or segments, can result in direct accidental and intentional impacts. Specific direct adverse impacts to wildlife species residing near, or travelling in the vicinity of, routes may or may not occur over time, and vary in degree of impact dependent upon route use intensity and frequency, as well as species density and season.

**Special Status Animals:** The desert tortoise is the only known T&E species known to occur within the planning unit. No new surveys for desert tortoises were conducted along any routes associated with this designation effort. Analyses were based on known desert tortoise sightings, wildlife and plant communities known to occur in the vicinity of particular routes, CDCA Plan information, BLM office records, BLM management plans for adjacent public land areas, RAREFIND Natural Diversity Database records, previous EAs, the Desert Tortoise (Mojave Population) Recovery Plan and staff familiarity with tortoises, wildlife species and habitats of the planning area.

The simple presence of a vehicle route in habitats supporting desert tortoises, does not necessarily equate to a specific direct impact, aside from the lack of cover, burrowing substrate and forage present within the confines of that route. But the type, intensity and frequency of vehicle use on specific routes or route segments, can facilitate direct accidental and intentional impacts to tortoises and their habitat

Overall fragmentation of desert tortoise habitat related to the No Action Alternative is thought to be slightly higher than that related to the Action alternatives. However, information pertinent to tortoise habitat and population fragmentation related to vehicles/route use is extremely sparse.

### **Impacts to Soil, Water and Air Resources**

OHV impact to undisturbed soils can occur within relatively short periods of OHV use. After lengthy periods of OHV use, new impacts on soils (e.g., additional compaction, higher reductions in porosity, further increased bulk density, or accelerated water & aeolian erosion rates) within the confines of the now existing route are relatively small, but can be magnified by specific vehicle types, duration of vehicle use and other factors, such as livestock grazing (cattle often trail adjacent to vehicle routes) and weather. The "existing" routes have been in existence for 5 to 50 or more years. Further direct soil impacts within the disturbed soil confines of these open and limited use routes is considered unlikely, though accelerated erosion could occur on many in the future, dependent on type, intensity and frequency of vehicle use, affected terrain and soil strata, as well as the season of vehicle use.



OHV impacts to water quality may result from increased turbidity and contamination from leaking fuel oils associated with use of wash routes, which provide ephemeral waters to wildlife.

### **Impacts to Cultural and Native American Values**

Cultural resources can be extremely fragile in nature and subtle in appearance. These characteristics lend themselves to inadvertent damage or destruction by vehicles, as well as activities associated with vehicle travel. Artifacts and rock alignments are sometimes difficult to see at ground level and have been damaged in other areas by vehicular usage. Routes leading to, through, or terminating at, areas of known sensitivity, increase the possibility of inadvertent and intentional damage to cultural resources. Previous impacts to sites within the project area have been documented. A few of the existing routes in the planning area traverse archaeological sites or are located immediately adjacent to known archaeological sites.

No additional, specific direct, indirect or residual impacts to cultural resources have been identified within the project area as a result of the No Action alternative. All identified cultural resources would be avoided during any route rehabilitation and/or barrier construction or would be analyzed and appropriately mitigated under supplemental environmental analysis. No new adverse impacts to cultural resources are anticipated to occur as a result of the No Action alternative.

### **Impacts to Utilities**

The designation of routes of travel will have no effect on existing corridors or maintenance of those corridors under the No Action Alternative.

### **Impacts to Recreation**

Specifically, direct recreation impacts related to the No Action alternative would include: maintenance of the same amount of vehicle route mileage as that now officially designated and signed as open in the planning unit; a facilitation of the public's ability to know where they are in a specific portion of the planning unit; an emphasized identification of where a route ends or where a hazard may be encountered; an improved ability of visitors to turn around at the terminus of a one way route; and a limitation of the number of potentially hazardous, or resource-damaging, closed routes easily mistaken as open; through effective reclamation or concealment of designated closed routes in the planning unit. Few impacts on recreation use would occur with this alternative that do not occur with the Proposed Action alternative.

### **Impact to Minerals and Mining**

The designation of routes will have no significant effect on mining or mineral exploration in the Planning Area under the No Action Alternative. The existing route network will be



unchanged as depicted by the route inventory of 1979. Supplemental route designation and CDCA plan amendments may be pursued at a later date.

### **Impacts to Vehicle Access**

All "existing routes in MUC L and M areas, including navigable washes that have been individually identified would be designated open for motor vehicle use, except where such use has already been limited or prohibited. This alternative would allow existing access to continue on public lands in the 8,560 miles of route network that has been inventoried in the southern portion of the Planning Area and in the existing route network in the remainder of the Planning Area.

## **4.9.2 Alternative 2**

### **Impacts to Vegetation**

**General Vegetation:** Potential for weed establishment and fire occurrence, that could impact vegetation adjacent to designated open routes. Low potential for large-scale vegetative type conversion affecting identified sensitive vegetation, in connection with the latter two impacts, in specific areas.

A high potential for additional individual plant damage/loss, where vegetation occurs close to the edges of routes designated as open, would also likely occur with all alternatives. Routes which conflict with other resources would be closed under this alternative and would result in positive impacts to vegetation in areas where routes are designated limited or closed.

**Special Status Plants:** This alternative would close any route within 1/4 mile of known occurrence of current or future listed T&E Plant populations. This action would create a positive impact on sensitive vegetation.

**Biological Soil Crusts:** Impacts the same as No Action

**Riparian/Wetland:** Routes within 1/4 mile of a natural or artificial water source (e.g., springs, seeps, streams, guzzlers) would be designated closed to vehicle access. This action would be a positive benefit to these specific areas and the associated habitat and vegetative communities.

**Noxious Weeds:** Invasive plant species common to the planning area all prefer disturbed sites, thrive in high nitrogen content soils but are not completely limited by low-nitrogen content soils. The seeds of these species are also easily transported from one area to another. They often become established in low numbers in disturbed soil areas like road shoulders, spreading further following various degrees and kinds of soil disturbance. These non-native plant species can out-compete or even displace native vegetation. Together, the invasive traits of these plants and the high invasibility exhibited by high use routes within a route network pose a high potential for non-native plant displacement of



native species in the vicinity of heavily used route shoulders over time.

### **Impacts to Wildlife**

**General Wildlife:** The most substantial direct positive impact to wildlife within this planning area would include: 1,070 fewer miles of designated open routes in wildlife habitats, in relation to the current "existing" Route Network, or No Action Alternative. Wildlife will benefit from the closure of routes that cause conflict with roosting, nesting or watering site.

**Special Status Animals:** Specific biological parameters have been applied under this alternative to meet desert tortoise DWMA goals and objectives. Routes have been designated "Closed" or "Limited" as appropriate and will result in positive benefit to the desert tortoise and other wildlife.

### **Impacts to Soil, Water and Air Resources**

Soil, water and air resources will realize moderate benefit from additional route limitations or closures, particularly closure of wash routes.

### **Impacts to Cultural and Native American Values**

Cultural and Native American values will receive additional protection under this alternative. Closure of any route within 1/4 mile of a significant sacred site or cultural resource that may be impacted or lost will provide a positive impact to the continued preservation of the integrity of the site or area.

### **Impacts to Utilities**

This alternative will have no effect on existing facilities within utility corridors or the maintenance of those corridors. New facilities may be subject to additional parameters in DWMA's (see Appendix A) including limitations on new access.

### **Impacts to Recreation Resources and Activities**

Direct recreation impacts related to this alternative would include 1,070 fewer miles of designated open routes over the current "existing" Route Network of 8,560 miles, or No Action. The 1,070 miles includes 549 miles that would be limited in some manner and 521 miles that would be closed. The primary recreationists to be impacted would be technical four-wheel drive enthusiast and hunters both of whom may make more extensive use of wash routes and routes crossing rugged terrain.

### **Impacts to Minerals and Mining**

The elimination of wash routes will limit potential for mineral exploration in the southern third of the Planning Area under this alternative. This impact is not expected to have a



significant overall effect on mineral development in the Planning Area.

### **Impacts to Vehicle Access**

This alternative would simplify a visitor's ability to find his/her way in the planning unit. Effective on-the-ground signing, open route berm maintenance and concealment of designated closed routes would also be beneficial in directing travelers to where they want to go and would help them stay on approved routes, a situation not currently occurring to the degree feasible.

Some current "existing" routes are restricted as result of this alternative, which limits or denies vehicle access. This alternative would allow existing access on public lands to 7,490 miles, and limited access to another 548 miles of the 8,560 miles of the route network that has been inventoried in the southern portion of the Planning Area; and to the "existing" route network in the remainder of the Planning Area. In addition, all wash routes that are not part of the primary transportation network will be designated as closed in desert tortoise DWMAs.

## **4.9.3 Alternative 3**

### **Impacts to Vegetation**

**General Vegetation:** Potential for weed establishment and fire occurrence, that could impact vegetation adjacent to designated open routes. Low potential for large-scale vegetative type conversion affecting identified sensitive vegetation, in connection with the latter two impacts, in specific areas.

A high potential for additional individual plant damage/loss, where vegetation occurs close to the edges of routes designated as open, would also likely occur with all alternatives. Routes which conflict with other resources would be closed under this alternative and would result in positive impacts to vegetation in areas where routes are designated limited or closed.

**Special Status Plants:** This alternative would close any route within 1/4 mile of known occurrence of current or future listed T&E Plant populations. This action would create a positive impact on sensitive vegetation.

**Biological Soil Crusts:** Impacts are the same as No Action

**Riparian/Wetlands:** Routes within 1/4 mile of a natural or artificial water source (e.g., springs, seeps, streams, guzzlers) would be designated closed to vehicle access. This action would be a positive benefit to these specific areas and the associated habitat and vegetative communities.

**Noxious Weeds:** Invasive plant species common to the planning area all prefer disturbed sites, thrive in high nitrogen content soils but are not completely limited by low-nitrogen



content soils. The seeds of these species are also easily transported from one area to another. They often become established in low numbers in disturbed soil areas like road shoulders, spreading further following various degrees and kinds of soil disturbance. These non-native plant species can out-compete or even displace native vegetation. Together, the invasive traits of these plants and the high invasibility exhibited by high use routes within a route network pose a high potential for non-native plant displacement of native species in the vicinity of heavily used route shoulders over time.

### **Impacts to Wildlife**

**General Wildlife:** The most substantial direct positive impact to wildlife within this planning area would include: 1,070 fewer miles of designated open routes in wildlife habitats, in relation to the current "existing" Route Network, or No Action Alternative. Wildlife will benefit from the closure of routes that cause conflict with roosting, nesting or watering site.

**Special Status Animals:** Specific biological parameters have been applied under this alternative to meet desert tortoise DWMA goals and objectives. Routes have been designated "Closed" or "Limited" as appropriate and will result in positive benefit to the desert tortoise and other wildlife.

### **Impacts to Soil, Water and Air Resources**

Impacts are the same as Alternative 2 within DWMA's. Outside of DWMA's, except when washes are part of the primary route network, this alternative can be expected to result in somewhat fewer impacts than Alternative 1 where washes are presumed open, but somewhat greater impacts than Alternative 2 where washes are presumed closed. The exception would be in sensitive areas such as ACECs, UPAs, etc, where 43 CFR criteria are likely to result in additional restrictions.

### **Impacts to Cultural and Native American Values**

Cultural and Native American values will receive additional protection under this alternative. Closure of any route within 1/4 mile of a significant sacred site or cultural resource that may be impacted or lost will provide a positive impact to the continued preservation of the integrity of the site or area.

### **Impacts to Utilities**

Impacts are the same as Alternative 2.

### **Impacts to Recreation Resources and Activities**

Impacts are the same as Alternative 2.



### **Impacts to Minerals and Mining**

Impacts are the same as Alternative 2

### **Impacts to Vehicle Access**

This alternative would simplify a visitor's ability to find his/her way in the planning unit. Effective on-the-ground signing, open route berm maintenance and concealment of designated closed routes would also be beneficial in directing travelers to where they want to go and would help them stay on approved routes, a situation not currently occurring to the degree feasible.

Some current "existing" routes may be restricted as a result of this alternative, which may, limit or deny vehicle access. Some current "existing" routes are restricted as a result of this alternative, which limits or denies vehicle access. This alternative would allow existing access on public lands to 7,490 miles, and limited access to another 548 miles of the 8,560 miles of the route network that has been inventoried in the southern portion of the Planning Area; and to the "existing" route network in the remainder of the Planning Area. Closure or seasonal limitation of washes, including navigable washes, that do not contribute to the primary transportation network or access specific recreational destinations would not be addressed as a class, but are addressed on a case-by-case basis consistent with the criteria. This action will impact vehicle access by denying access to some washes and limiting the use of others.

## **4.9.4 Alternative 4**

Impacts to all resources and activities are the same as alt 3 except:

This alternative would not consider routes for closure based on being defined a redundant route in MUC Moderate or Intensive and may facilitate a moderate increase in open routes.

## **4.9.5 Alternative 5 (Preferred Alternative)**

Impacts to all resources and activities are the same as Alternative 3.



## **4.10 BUREAU POLICY ON LANDFILLS: TECOPA AND SHOSHONE PROPOSED LANDFILL MUC CHANGE FOR DISPOSAL**

### **4.10.1 ALTERNATIVE 1 (No Action) - Landfills**

The existing management situation would continue on the 29.40 acres encumbered by the former and current Tecopa landfill site and 50 acres encumbered by the former and current Shoshone landfill site.

Lands would be retained in Federal ownership for the reasonably foreseeable future and lands would be managed consistent with existing laws, regulations and guidance. Existing activities that are inconsistent with policy would be terminated. This includes both authorized and unauthorized activities. Leases for operating small landfills would be examined. If in compliance with all terms and conditions, existing operations would continue through the life of the lease, at which time State closure procedures would be initiated. For facilities that are not in compliance, existing leases would be terminated, and state closure procedures initiated. The BLM would work with local operators to provide alternative facilities where needed, while closure activities are underway. Existing and future unauthorized occupancies in the affected area would be resolved through removal and restoration, consistent with existing policy and procedural guidance. (Refer to Chapter 7, Figure 13b for a visual representation of the identified areas.)

#### **Impacts to Vegetation, Wildlife, Soil, Water and Air Resources**

Some environmental impacts associated with the former and current Tecopa landfill have already occurred. Among these are surface disturbance, disruption and compaction of surface soils, loss of vegetation, and loss of associated resident wildlife on approximately 5 acres of the lease site. Future anticipated impacts at the Tecopa site include increased local dust generation during activities.

Environmental impacts associated with the former and current Shoshone landfill have already occurred. These include surface disturbance, disruption of natural drainage patterns, increased erosion to an adjacent drainage, disruption and compaction of surface soils, loss of vegetation, and loss of associated resident wildlife on approximately 8 acres of the lease site. Future anticipated impacts at the Shoshone site also include disruption of natural drainage patterns and increased erosion to an adjacent drainage.

Standard quarterly groundwater monitoring began at both sites in 1997; no impacts to area groundwater have been found. No future groundwater impacts are anticipated.

#### **Impacts to Recreation Resources and Activities**

Currently, lands under this alternative are managed under the existing MUC Limited guidelines. Because the affected lands are managed as landfills, recreational



opportunities are nonexistent. There would be no impacts to recreation under this alternative.

### **Impacts to Land Uses**

Indirect impacts from Alternative 1 would occur at the Tecopa site based on continued use of the existing landfill authorization until site closure and reclamation is effected, or, if State standards can be met, until the authorization expires in 2007.

If leased lands meet state standards, they could also continue to be used for related activities during the term of the authorization, or alternatively, for closure activities. The affected lands would be retained in public ownership.

Indirect impacts from Alternative 1 at the Shoshone site would occur based on continued use of the existing landfill authorization at a much reduced rate, until site closure and reclamation is effected, or, if State standards can be met, until the authorization expires in 2008.

### **Impacts to Socioeconomic**

The socioeconomic impacts of retaining the landfills in Federal ownership are unknown regionally. Locally, it may result in higher short-term costs for waste management in eastern Inyo County. The long-term costs are difficult to predict, and would depend upon the ultimate strategy and timing for each landfill.

## **4.10.2 ALTERNATIVE 2 (Preferred) - Landfills**

### **Impacts to Vegetation, Wildlife, Soil, Water and Air Resources**

Impacts are anticipated to be the same as Alternative 1 (No Action)

### **Impacts to Recreation Resources and Activities**

Impacts are the same as Alternative 1.

### **Impacts to Land Uses**

Impacts to land use would be similar to Alternative 1 (No Action) except that closure may occur over a longer time frame. Facilities are expected to get a limited amount of use in the future with modest impacts from landfilling activities. The State, rather than BLM, would identify mitigation measures, because it is against BLM policy to include encumbrances on these patents.



### **Impacts to Socioeconomic**

The socioeconomic impacts are similar to Alternative 1 except locally Alternative 2 may result in lower short-term costs for waste management in eastern Inyo County.

## **4.11 WILD AND SCENIC RIVER ELIGIBILITY**

The WSR Act and Federal guidelines require Federal agencies, upon determination of WSR eligibility, to provide interim protection and management for a river's free-flowing character and any identified outstandingly remarkable values, subject to valid existing rights, until such time as a suitability study is completed. Refer to Appendix O, Appendix S and Appendix T for a description of the outstanding remarkable values that will benefit by this eligibility determination. During this interim period all proposals that could affect the Amargosa River and Cottonwood Creek and their resources will be evaluated against the regulatory criteria and additional limits on uses may occur. Further analysis of potential impacts to all resources and uses will be evaluated during the suitability analysis.

## **4.12 CUMULATIVE IMPACTS**

As defined in 40 CFR, Sec. 1508.7, "Cumulative impact" is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

There have been several significant actions and proposals since the preparation of the CDCA Plan in 1980. These have resulted or have the potential to add to cumulative impacts for one or more resources being affected by the NEMO Plan. A listing follows.

**WEMO** - West Mojave, a bioregional planning area bordering the west side of the NEMO Planning Area. WEMO, NECO, and NEMO collectively encompass most of the California Desert Conservation Area.

**NECO** - Northern and Eastern Colorado, a bioregional planning area bordering the south side of the NEMO Planning Area. NECO, WEMO, and NEMO collectively encompass most of the California Desert Conservation Area.



**FT. IRWIN EXPANSION** - A proposal by the U.S. Army to significantly expand their boundary south, east and west of the existing reserve. BLM administered lands would be transferred to the U.S. Army.

**LAS VEGAS RMP** - A recently completed Resource Management Plan covering the area bordering the northeastern portion of the NEMO Planning Area boundary. Decisions were made that affects desert tortoise recovery and livestock grazing in critical habitat and grazing allotments partially managed by Nevada and California.

**MOJAVE NATIONAL PRESERVE DEIS AND GMP** - A recently released revised Draft Environmental Impact Statement/General Management Plan presents three alternatives for the management of the 1.6 million-acre Preserve in the northern Mojave Desert of California. Proposals are made that seek to provide recreational access and also seek to protect and perpetuate native species in a self-sustaining environment.

**DEATH VALLEY NATIONAL PARK DEIS AND GMP** - A recently released revised Draft Environmental Impact Statement/General Management Plan presents three alternatives for the management of the 3.3 million-acre National Park in the northeastern Mojave Desert of California. Proposals are made that seek to extend existing management strategies to new lands added with the passage of the California Desert Protection Act, to incorporate the designation of 95 percent of the Park as wilderness into the management approach and also seek to perpetuate native species in a self-sustaining environment.

**CALIFORNIA DESERT PROTECTION ACT OF 1994 (CDPA)** - An Act of Congress which established 69 wilderness areas, the Mojave National Preserve (MNP), and expanded Joshua Tree and Death Valley National Monuments and redefined them as National Parks. Lands transferred to NPS were formerly administered by the BLM and included significant portions of grazing allotments, wild horse and burro Herd Management Areas and Herd Areas, and ACEC's

**WILDLANDS/CATELLUS ACQUISITION AND EXCHANGE** -

Approximately 322,500 acres of land controlled by the Catellus holding company has recently been added to the lands managed by the BLM through purchase, purchase and donation, and exchange with Wildlands Conservancy.

**TIMBISHA LEGISLATIVE PROPOSAL** - A proposal before Congress to create a Timbisha Tribe Indian Reservation using lands currently under BLM and NPS administration.

**URBAN EXPANSION** - The expansion in population and supportive developments within and adjacent to the NEMO Planning Area. The most notable areas are Baker, CA; Bullhead City, AZ; Las Vegas, NV; Stateline (Primm), NV and Pahrump, NV.



**I-15 EXPANSION** - Planned features are truck passing lanes and an agricultural inspection station.

There are additional factors and actions that are not as generally significant which may be examined by individual sections of the cumulative impacts analysis.

#### **4.12.1 VEGETATION AND WILDLIFE**

Lovich and Bainbridge (1999) discuss the sensitivity of desert habitats to disturbance and the slow rate of natural recovery:

*The landscape and native vegetation of the southern California deserts have been significantly altered during the last century by a variety of factors including: livestock grazing, introduction of exotic species, off-road vehicle use, urbanization and its attendant effects, and military activities. Extreme temperatures, intense sun, high winds, limited moisture and the low fertility of desert soils make natural recovery of the desert very slow after disturbance. Conditions suitable for plant establishment occur only infrequently and irregularly, and it may take hundreds of years for full recovery to take place without active intervention. Many of the actions of desert development and utilization have profound effects on ecosystem stability, diversity, and productivity.*

Livestock grazing has occurred historically (mid-1800s to present) throughout much of the desert. In a recent review of the effects of grazing on public land in the hot deserts (Chihuahuan, Mojave, and Sonoran) of the American Southwest, the General Accounting Office (1992) concluded that a high environmental cost has been exacted on these fragile ecosystems and that land degradation due to grazing is continuing (Lovich and Bainbridge 1999). Of particular concern is the potential destruction of fragile biological soil crusts due to trampling by livestock. The less it rains the slower the recovery of biological soil crusts. In hot deserts like the Mojave, it can take decades before biotic soils begin to recover. Other potential impacts of grazing include soil compaction and increased erosion, trampling of plants, and overcropping.

In recent years, most grazing has been limited to the West Mojave and East Mojave, including the southern half of the NEMO Planning Area. Since the designation of critical habitat for the desert tortoise, sheep grazing has been eliminated in much of the West Mojave. There are no sheep allotments in the East Mojave. Livestock grazing was eliminated from the Piute-Eldorado Critical Habitat Unit on adjacent lands in Nevada through the Las Vegas Resource Management Plan. Conservation groups have expressed an interest in buying most cattle allotments and terminating grazing in the southern portion of the NEMO Planning Area and the adjacent Mojave National Preserve. This would further reduce conflicts with desert tortoise.



In general, invasive exotic plants tend to proliferate in areas of disturbance (Hobbs 1989). The spread of exotic plants has degraded habitat for wildlife and plants throughout the desert. Once established, exotic plants may diminish the abundance of native species due to competitive interactions or by disruption of natural processes such as fire frequency and intensity (Lovich and Bainbridge 1999). Some of the more important exotic plants in the southern California desert are saltcedar or tamarisk (*Tamarix ramosissima*), Russian thistle (*Salsola iberica*), filaree (*Erodium cicutarium*), and several grass species including split grass (*Schismus* spp.) and bromes (*Bromus* spp.) (Lovich and Bainbridge 1999). Desert tortoise habitat has been degraded by the replacement of native perennial grasses with aggressive alien grasses such as *Bromus* and *Schismus*. *Schismus barbatus*, which is often eaten and perhaps sometimes preferred by tortoises, has been shown empirically to deplete tortoises of nitrogen and cause weight losses (Esque 1994, Avery 1998, Nagy et al. 1998). Avery (1998) also demonstrated that *S. barbatus* was lower in overall quality, crude protein, essential amino acids, water and vitamin concentrations, and higher in fiber and heavy metal concentrations than three non-grass species measured.

Tamarisk infestations along the Amargosa River and its tributaries (e.g., Salt Creek) have affected threatened and endangered (T&E) species including least Bell's vireo, southwestern willow flycatcher, Amargosa vole and Amargosa niterwort. The BLM Sensitive Amargosa pupfish, Nevada speckled dace, burrowing owl and several bat species are also at risk of being impacted by tamarisk. Tamarisk aggressively displaces native trees and shrubs, withdraws and transpires water from the ground at a high rate, and is a poor source of food and shelter for desert wildlife. Recent regional efforts at reducing tamarisk at critical riparian sites (e.g., Afton Canyon, Salt Creek, Amargosa Canyon, Saratoga Springs) may mitigate the cumulative effects.

An established network of roads and highways through the Planning Area provides access for miners, recreationists, ranchers and others. The cumulative effects of this existing road network include promoting raven and coyote populations by providing roadkills used as food, the distribution of exotic plants and weeds and the associated fire occurrence potential, and related disturbances caused by increased access to remote areas from all forms of recreation. The Interstate highway system is a major fragmenting barrier for wildlife, especially for slow moving reptiles such as desert tortoise. Widening of the Interstate will not significantly increase its function as a barrier, but may allow an opportunity to add fencing and thereby reduce roadkills. Barrier fences are a potential mitigation, but they can also increase population fragmentation and increase the potential for inbreeding. (Opdam 1988, Frankham 1995). Over the long term, culverts and bridges that facilitate movements of tortoises between both sides of the road are necessary to allow some gene flow (Boarman and Sazaki, 1996).

Off-road vehicle use (OHV) can have impacts similar to those caused by grazing. OHV impacts include destruction of biological soil crusts, compaction of soils, destruction of vegetation, reduced rates of water infiltration, increased wind and water erosion, noise, and decreased abundance of lizard populations and other wildlife species (Busack and Bury 1974). Desert tortoises can be directly impacted by being crushed in burrows or on



the surface, or indirectly impacted through habitat alteration (soil compaction, vegetation destruction) or toxins from exhaust.

Various old and new utilities (e.g., electrical transmission lines, gas and oil pipelines, and fiber-optic cables) form a network throughout the desert. In addition to the direct reduction in habitat, there are indirect impacts associated with these utilities. Utility towers can provide perching and nesting sites for birds of prey particularly ravens, which prey on desert tortoise hatchlings and juveniles. New utilities will undoubtedly be constructed in the future to connect the Los Angeles area with the rest of the country.

In the West Mojave, upper respiratory tract disease (URTD) caused by a bacterium (*Mycoplasma*) has reduced desert tortoise populations significantly in the past 15 years or more. Predisposing factors such as poor nutrition (resulting from habitat degradation), drought, and release of captive desert tortoises ill with URTD into the wild are thought to be involved in the spread of URTD (Jacobson et al 1991). Individuals with URTD have been found in most regions of the California Desert, including the NEMO Planning Area. As URTD is a highly infectious disease, increased mortality from URTD may continue to occur in the Planning Area.

A shell disease, cutaneous dyskeratosis, has also been found in desert tortoise populations including recent cases reported in the east Mojave. The disease may be caused by environmental toxins (e.g., heavy metals, chlorinated hydrocarbons, organophosphates, selenium), but this relationship needs further testing. In a study by Avery (1998), concentrations of heavy metals, including chromium, iron, copper, zinc, and aluminum, were found to be particularly high in the exotic grass *Schismus barbatus* compared to three other plant species. Tortoises competing with cattle for forage in seasons when production of winter annuals is low, have been shown to consume more exotic *S. barbatus*. Tortoises may also be subjected to heavy metals such as lead and nickel that are deposited in the environment from motor vehicle emissions or disbursed during dust storms. Homer et al. (1994, 1996) found potentially toxic metals and minerals in the liver or kidney of necropsied tortoises.

Urbanization in the Planning Area is centered around a few rural communities and greater Las Vegas, including the Stateline area. The former has changed little for many decades. The latter has seen the recent expansion and addition of new casinos and a major golf course in the region. To date, loss of habitat has not been great, and indirect effects on wildlife and special status plants have been negligible. Pressure for new gambling, tourist and support facilities along the I-15 corridor are expected.

Burro herds occur in the East Mojave. Many of the burros graze in desert tortoise and bighorn sheep habitat. Impacts from burros including trampling and destruction of vegetation in riparian areas, diminished water quality due to sedimentation, impacts to soil and vegetation due to heavy trailing and rolling areas, and exclusion of native species, such as bighorn sheep, from water sources. A small burro Herd Management Area (HMA) has been identified for retention in the Planning Area. Proactive management of the HMA would be necessary to reduce and maintain appropriate management levels of burros and eliminate potential adverse impacts. The elimination of



burros from any public lands will directly benefit wildlife and elimination of burros on adjacent Park Service lands may indirectly benefit wildlife on public lands by facilitating maintenance of appropriate management levels.

Mining in the Planning Area has had an effect on T&E species and wildlife. In general, any mining, which results in surface disturbance results in some loss of wildlife habitat, ground cover, and associated increased soil erosion. In particular, there has been a loss of habitat for desert tortoises, bats and bighorn sheep. Locatable mining (e.g., gold, silver) usually occurs in mountainous areas, which is generally not good tortoise habitat but may affect bats and bighorn sheep, while mineral material sales (e.g., sand, gravel, pumice, etc.) are located in valley bottoms and on alluvial fans which are generally more in conflict with tortoise habitat. Renewed mining interest in historic mine complexes has also had an impact on bat species that have colonized these mine shafts and adits. Mining operations have been located in important avian migration and wildlife corridors, such as the Amargosa River channel and its tributaries, the Kingston and Clark Mountains, Mountain Pass, Ibex and Silurian Hills, and the Panamint Valley. Additional measures have been proposed in this document to reduce cumulative impacts from mining and other surface disturbing activities.

With the passage of the California Desert Protection Act (CDPA, 1994), there were two major regional effects. One was the establishment of wilderness areas throughout the region including 1.2 million acres of public lands in the Planning Area. Within wilderness areas, the use and subsequent impacts of motorized vehicles are virtually eliminated, and other associated multiple uses that require motorized access are reduced. The impacts of motorized vehicles upon wildlife in wilderness areas are anticipated to be negligible. Some wilderness study areas were not designated as wilderness but may be added by Congress later. The second effect was the establishment of the Mojave National Preserve and the expansion of Death Valley National Park. Designation of the Preserve and expansion of the Park reduced multiple-use management (except hunting and livestock grazing) over approximately 2.9 million acres in the region. Large amounts of desert tortoise habitat are now within the Preserve.

The BLM has several habitat acquisition efforts underway. Among these are small parcels bought from time to time using compensation funds. The largest such acquisitions have been in the West Mojave. Land exchanges made as part of the West Mojave Land Tenure Adjustment Program have resulted in large acquisitions of tortoise habitat in the West Mojave. An exchange involving Catellus lands recently added 322,500 acres of public lands within the NEMO Planning Area including 98,000 acres of tortoise habitat in the NEMO Planning Area and in adjacent regions. These acquisitions increase the capability of Federal and State agencies to manage these lands to conserve T&E species.

The BLM has recently acquired several riparian habitat parcels in the Planning Area. The parcels were acquired through exchanges with private landowners and donation from the Nature Conservancy. These acquisitions partially fulfill recommended land acquisition actions prescribed in the Amargosa Canyon and Grimshaw Lake ACEC



Management Plans, although additional BLM riparian habitat acquisition has been recommended for the Planning Area.

There are no military bases in the Planning Area, however China Lake Naval Air Weapons Station, Ft. Irwin, and the Marine Corps Air Combat Center at Twentynine Palms are nearby. Ft. Irwin and the Marine Corp Air Combat Center are used extensively for vehicular and airborne maneuvers, and both encompass considerable amounts of desert tortoise habitat. Of the two, only Ft. Irwin contains critical habitat for the tortoise. Ft. Irwin has recently proposed expanding southward in the West Mojave Planning Area and/or eastward into the NEMO Planning Area. The southward expansion would include desert tortoise habitat that supports up to 16 percent of the West Mojave tortoise population, resulting in that desert tortoise habitat becoming subject to impacts of small and large scale military training and maneuvers.

The Las Vegas Resource Management Plan (RMP) and Las Vegas Valley Habitat Conservation Plan (HCP) implemented the Desert Tortoise (Mojave Population) Recovery Plan on public lands and private lands, respectively, in Nevada immediately adjacent to the NEMO Planning Area on the east. To the west, the West Mojave Coordinated Management Plan (WEMO CMP) is currently in preparation; to the south, the Northern and Eastern Colorado Desert (NECO) CMP is in preparation. The latter two plans will implement the Desert Tortoise Recovery Plan within their respective areas and will provide management prescriptions and protection for many other T&E and special status plants and animals.

Overall, impacts to wildlife and special status plants from human activities are low in the NEMO Planning Area; human impacts are much higher in the adjacent West Mojave and to the east in Las Vegas Valley. A very large proportion of the NEMO Planning Area is in reserve level management (i.e., Death Valley National Park, Mojave National Preserve, BLM wilderness). Despite this, the invasion of exotic, weedy plants and the spread of URTD and shell disease create concerns about desert tortoise populations. Burro use above Appropriate Management Levels together with authorized cattle grazing, have impacted habitat in Shadow Valley for desert tortoise and other wildlife. Interstate Highways and adjacent corridors fragment habitat, and inhibit animal movements within the Planning Area and into adjacent Planning Areas; large mammals, such as bighorn sheep, are especially affected.

#### 4.12.2 SOIL, WATER AND AIR

**Soils:** Soil development in the Planning Area is poor and the plan would have no significant impact on the regional soils.

**Water:** The establishment of standards and guidelines which include best management practices (BMP) would benefit water quality over the entire Planning Area. Several of the ACEC and T&E plant proposals and Wild and Scenic River eligibility would benefit riparian and water quality especially in the upper Amargosa River which is classified as an impaired watershed. It is unclear if these actions would be sufficient to change the



impaired classifications in the NEMO Planning Area, some of which are based on naturally occurring factors.

**Air Quality:** The cumulative effect area for air resources includes the northeast portion of the Mojave Desert Air Basin and the Great Basin Valleys Air Basin. This area includes the Owens Valley and San Bernardino County PM<sub>10</sub> Planning Areas and the Southeast Desert Modified Air Quality Management Area Ozone Federal non-attainment areas. Most of the existing emissions are from sources outside BLM lands and would not be affected by the NEMO Plan. The expected emission levels are within the levels in the attainment demonstration in the SIPs and the cumulative NAAQS 24-hour and one-year PM<sub>10</sub> emission standards for Particulates and the one-hour ozone standard and are not likely to result in or contribute to exceedances of the National Ambient Air Quality Standards.

### 4.12.3 WILDERNESS

The California Desert Protection Act of 1994 (CDPA) established wilderness areas throughout the California Desert, including the Planning Area. In addition, it retained lands for further wilderness study and released lands from any further consideration for wilderness designation. Since that time, actions have been taken to stop unauthorized vehicular use within wilderness and to rehabilitate the evidence of past human impacts now within wilderness. As a result, the conditions of wilderness values have incrementally improved within designated wilderness since the passage of the CDPA. Likewise, areas identified for further wilderness study have been managed under the interim management guidelines, which assure that wilderness values are not impaired to the point of affecting suitability for designation as wilderness.

None of the alternatives identified in this plan would negatively impact wilderness values in either designated wilderness or wilderness study areas within the Planning Area. Alternatives that would reduce or eliminate heavy use by either feral burro or cattle would further improve wilderness values in either designated wilderness or wilderness study areas. Alternatives that would reduce or eliminate congregation areas, particularly around water sources, by either feral burro or cattle would also further improve wilderness values at those sites.

The Fort Irwin expansion proposal would eliminate four wilderness study areas from further consideration as potential wilderness. The Wildlands/Catellus exchange reduced the potential for degradation of wilderness values through development of non-Federal lands within wilderness. Population growth in western Nevada, particularly in the Primm and Pahrump areas, could place increased pressure on wilderness use, both authorized and unauthorized, near those areas. If proposals for privatization of the lands around the golf course southwest of Primm, NV are accommodated, more use, both authorized and unauthorized, could occur within wilderness. There is an overall upward trend in the condition of wilderness values within the Planning Area, which is anticipated to continue.



#### **4.12.4 CULTURAL RESOURCES AND NATIVE AMERICAN VALUES**

Cumulative impacts from Fort Irwin Expansion and the Timbisha Legislative proposal, if implemented, may result in a net loss of prehistoric and historic cultural resources and Native American values on public lands managed by the BLM. In contrast, lands acquired from the Wildlands/Catellus exchange actions may result in a net gain of cultural resources managed by the BLM. CDPA, with wilderness designation, affords a greater level of protection for cultural resources within Wilderness.

Sensitive historic and prehistoric cultural resources within the California Desert District will continue to be impacted by general recreation activity, mineral exploration, grazing, unguided site visitation and vandalism. There will be continued incremental loss of cultural resources due to inadvertent and authorized actions when mitigation measures result in data collection. Overall, the NEMO Plan will have a negligible cumulative effect on cultural resources on public lands within the California Desert District.

#### **4.12.5 WILD HORSE AND BURRO**

The CDPA placed the majority of herd management areas and retention areas for wild horses and burros under the management of the National Park Service. Their policy is elimination of feral animals, which include wild horses and burro. The portions of the herd management areas remaining under BLM administration were reduced to the point that it is questionable whether or not viable gene pools can be maintained for those horse and burro herds, without substantial intervention.

The NEMO plan is considering alternatives that range from no changes from present regarding burro herds remaining on public lands to the complete elimination of burros in critical desert tortoise habitat in the East Mojave Desert. The NECO plan is considering a similar range of alternatives focusing on burros in the Colorado River area.

Nine herd management areas (HMAs) were established for burros in the CDCA Plan, three of which have been subsequently eliminated through plan amendments. The passage of the California Desert Protection Act and transfer of lands to the National Park Service affected the management status of additional burro HMAs. The Park Service is proposing to eliminate burros from both the Mojave National Preserve and Death Valley National Park under their DEIS/GMP documents. See the extent of burro range that shows BLM-managed HMAs prior to the passage of the CDPA. (Chapter 7, Figure 8b) Portions of four HMAs remain within the NEMO Planning Area and two more HMAs within the NECO Planning Area. Any substantial impacts to these herds could affect the long-term viability of feral burros in the California Desert.

#### **4.12.6 CATTLE GRAZING (and Allotments)**

The CDPA placed some grazing allotments partially and some allotments completely within the boundaries of Death Valley National Park and Mojave National Preserve.



The Mojave National Preserve management team has since sought willing buyers to purchase the allotments within the boundaries of the Preserve. The expressed goal has been to retire the allotments within the Mojave National Preserve. Death Valley National Park management team has expressed no such strategy. The General Management Plan for the Mojave National Preserve includes an alternative that would establish ephemeral grazing only within the boundaries of the preserve, based on meeting minimum forage production limits.

The CDPA also established 69 wilderness areas, some of which included existing grazing allotments. Although grazing is allowed within wilderness, the restrictions regarding use of motorized vehicles, equipment and development of new range improvements have made the grazing operation more difficult for the permittees.

The Fort Irwin proposed expansion alternatives include grazing allotments which, if the proposed expansion is approved, could be purchased and grazing eliminated. Although not a part of NEMO, the livestock industry in the California Desert Conservation Area would be impacted as a whole. The NECO and WEMO plans are considering alternatives that range from no changes to grazing operations to elimination of grazing within critical desert tortoise habitat. No allotments within the NEMO Planning Area overlap the NECO or WEMO Planning Areas. However, the livestock industry in the California Desert Conservation Area is encompassed by the three plans, including NEMO, and would be impacted as a whole.

The No Action Alternative would have no incremental impacts from the existing situation. The grazing levels and seasons would be subject to biological evaluations, assessments, and opinions regarding the recovery of the desert tortoise. Some reductions in stocking levels and seasons of use could occur, depending upon the status of the desert tortoise recovery.

The preferred alternative would result in the cancellation of ephemeral use in the following allotments: Jean Lake, Kessler Springs, Piute Valley, Valley View, and Valley Wells. No temporary non-renewable use would be approved. Relinquishment of these leases would be granted on a case-by-case basis. In addition, 230 pounds of ephemeral forage would be required within DWMA's for spring turnout. Taken together these factors would result in the permanent reduction of grazing on several of the allotments within the Planning Area. If this alternative is also chosen in WEMO and NECO, similar reductions in grazing would occur.

Therefore the cumulative effects of NEMO and other reasonably foreseeable actions could noticeably reduce the size of the portion of the livestock industry centered on use of BLM administered lands in the California Desert Conservation Area.

#### **4.12.7 UTILITIES**

There would be no major adverse cumulative impacts on utility corridors. Compared with the constraints placed on use of existing utility corridors by the CDPA due to



wilderness designation and transfer of lands to the Park Service, parameters imposed by the NEMO plan are insignificant.

#### **4.12.8 RECREATION**

The CDPA created 69 wilderness areas to be managed by BLM and transferred approximately 1.9 million acres of land to NPS administration within the California Desert. Recreation opportunities related to wilderness and use of units within the NPS system were substantially increased. Recreation opportunities traditionally offered to visitors on BLM administered lands that are dependent upon vehicular access and/or involve collection of specimens were substantially decreased. All opportunities may be further limited should the Ft. Irwin expansion occur. Also see Vehicle Access discussion in section 4.10.10

#### **4.12.9 MINERALS AND MINING**

It is anticipated that cumulative impacts, as they relate to the NEMO plan, would not have a significant direct impact on mining, regarding areas of known mineral potential. Prospecting, because it is dependent on vehicular access, would be discouraged in wilderness and by route closures associated with route designation. This concern is tempered by the fact that route designations and closures will also occur under the no action alternative and independent of the NEMO Plan. Although vehicular access can, unless under a withdrawal, be achieved through a plan of operation or mining notice, the paperwork and bonding requirements for areas closed to vehicles would discourage most prospectors from obtaining the necessary authorization.

Because no withdrawals are being proposed in the NEMO Plan, discretionary mining activities such as gravel development would be more adversely impacted than would locatable minerals if they occur in National Park Service lands, special management areas such as ACECs or habitat management plans outside of DWMAs. Within DWMAs, in the NEMO Planning Area, gravel operations are provided for under programmatic consultation and development should be facilitated.

#### **4.12.10 VEHICLE ACCESS**

Route designation for DWMAs in this plan would further limit vehicular access to some BLM administered lands (e.g., approved routes including washes). The incremental decrease proposed in this planning effort is small. However, it would be added to the decreases experienced in recent years due to the passage of the California Desert Protection Act, associated wilderness designations and anticipated route designations within WEMO, NECO and LVRMP areas. Route designations particularly affect access by elderly or those with mobility restrictions who can not walk, ride horses or gain access through other non-mechanical means. The Fort Irwin proposed expansion has the potential for further reduction of access to and availability of public land. Taken together with reasonably foreseeable actions cumulatively significant impacts to access are anticipated.



#### **4.12.11 LAND TENURE**

Significant changes in land ownership patterns and management have occurred and are continuing in the planning area. Land exchanges have occurred or are underway to implement the provisions of the California Desert Protection Act such as acquisition of wilderness lands in the Planning Area. These include acquisition of 58,000 acres of the State Lands Commission, 437,000 acres of Catellus properties throughout the CDCA purchased in combination with the Wildlands Conservancy and the Land and Water Conservation Fund (LWCF) 98,000 acres of which are in the NEMO Planning Area. In addition, the CDPA requires the Secretary of the Interior to conduct a study to identify lands suitable for a reservation for the Timbisha-Shoshone Tribe, including approximately 1,000 acres of public lands northwest of Death Valley Junction, California within the Planning Area. If an expansion of the National Training Center, Ft. Irwin were to be approved by Congress, the affect to the NEMO Planning Area could range from a minimum of 25,000 acres, to a maximum of 273,000 acres. It is more likely to affect less rather than more acreage in the NEMO Planning Area based on the latest preferred alternatives. Cumulatively the effects of the NEMO Planning Effort land tenure changes as outlined in Appendix N are relatively small when compared with the landscape scale changes encompassed by the land tenure proposals outlined above. Taken together with these changes and with similar changes proposed by WEMO and NECO significant impacts could occur to local economies. Overall emphasis on exchanges as the land tenure tool of choice is essential to assure that Counties and private lands benefit from increased development opportunities that exchanges can offer to offset any potential loss of tax revenues.

#### **4.12.12 SOCIOECONOMIC**

Implementation of fallback standards has resulted in some minimal socioeconomic impacts to public land users. Lessees with cattle operations would be affected over the long-term with changes to current grazing activities to meet standards under all alternatives. However, as public lands health and forage improves and resource objectives are achieved, benefits from more flexibility in grazing operations would be realized over the long-term. Achievement of standards in riparian and wetland habitats is anticipated to result in their increased enjoyment by the public and additional revenue to adjacent communities from visitation to these resources. In addition, some alternatives call for substantial changes or elimination of current grazing activities to meet desert tortoise recovery objectives resulting in reduction of income to affected lessees. Similar alternatives are proposed in WEMO and NECO to achieve desert tortoise recovery and grazing has been eliminated from the Piute-Eldorado Critical Habitat Unit in Nevada. The potential elimination of competitive event opportunities in some or all of the Planning Area results in the elimination of economic benefits from sale of goods or services by communities along the race courses. All of these specific economic effects are not considered to be significant locally, regionally or nationally.



The NEMO economic area is an area, which includes the population that resides and works around the NEMO Planning Area. To summarize the total economic impacts for this area would be increased job opportunities, output, proprietor income, and employee compensation as a result of increased visitation to the area<sup>7</sup>. This would be partially offset by a reduction in jobs and the associated reduced proprietor income from the elimination of grazing on allotments both on public lands and on adjacent Mojave National Preserve lands. With a resident population of less than 200,000 and approximately 76,000 jobs none of the alternatives would significantly impact the NEMO economic area. Even within specific industries such as range fed cattle and travel related services the positive and negative impacts appear minor relative to total employment in the region and will be locally focused. However, the cattle industry in particular is incurring cumulative effects as a result of this plan taken in combination with other bioregional plans identified specifically for recovery of the federally threatened desert tortoise covering portions of a four State area. Other ongoing and reasonably foreseeable activities may have substantial economic impacts that can not be anticipated at this time. (Dean Runyan Associates - Northern and Eastern Mojave Planning Area: Economic Impact Analysis, 24 June 1998; Prepared for the National Park Service)

## **4.13 IRRETRIEVABLE AND IRREVERSIBLE COMMITMENTS**

### **4.13.1 VEGETATION AND WILDLIFE**

No irretrievable or irreversible commitment of vegetation or wildlife resources is made.

### **4.13.2 SOIL, WATER AND AIR RESOURCES**

There is no irretrievable or irreversible commitment of soil, water and air resources.

### **4.13.3 CULTURAL RESOURCES AND NATIVE AMERICAN VALUES**

Any undertaking that involves ground disturbing activities will require site specific cultural analysis which may include survey, recording of historic and prehistoric sites identified, determinations of eligibility of sites to the National Register of Historic Places that will be impacted. Potential impacts to Native American values will be analyzed. Mitigation measures will be identified and implemented, if necessary. Avoidance of cultural resources is the preferred mitigation measure but is not always possible or feasible. Decisions to mitigate impacts to cultural resources by data recovery instead of avoidance and consequent removal of cultural resources from the project area constitutes

---

<sup>7</sup> Nevada growth is projected at 130% over the next 20 years. Pahrump Valley is receiving growth pressure from Las Vegas and is growing an average of 15% per year and facilities associated with national park designation for Death Valley and proposed strategies on public lands in the Amargosa Valley are anticipated to spur this increased visitation.



a residual impact to the site since rarely, if ever, is 100% of site excavated. Mitigation by data recovery also results in a steady loss of archaeological sites, a finite resource, from the original location and therefore reduces opportunities for interpretation in natural context. Data recovery may negatively impact Native American values that cannot be mitigated.

#### **4.13.4 WILD HORSE AND BURRO**

There are no irreversible impacts. Herd areas, which are not assigned as an HMA, may be re-evaluated in the future for the management of wild burros and horses. However, the genetics of the original herds may be irretrievable if all the burros or horses are removed from that area.

#### **4.13.5 CATTLE GRAZING (and allotments)**

Allotments, which are cancelled in DWMAs, will be lost for the reasonably foreseeable future. The closing of allotments will lead to the elimination of production of livestock in these DWMAs. Abandonment of facilities such as range improvements may lead to their eventual deterioration and loss unless they have wildlife habitat values.

### **4.14 LONG TERM PRODUCTIVITY VERSUS SHORT TERM USE**

This section is a combined discussion of standards and guidelines and threatened and endangered species alternatives. Alternative 1 addresses no action for all T&E proposals and standards and guidelines. The rest of the alternatives use the regional standards. All T&E proposals are arranged on a scale from more conservation balanced (Alternative 2) to more use or access balanced (highest numbered alternative) plus the preferred alternative.

**Alternative 1:** These alternatives do not involve any short-term uses of the environment above existing conditions and can be expected to result in modest benefits to long-term productivity.

**Alternative 2:** These alternatives involve minor short-term uses in support of T&E species protection and public lands health standards and can be expected to result in the greatest benefits to long-term productivity.

**Alternative 3:** These alternatives involve minor short-term uses in support of T&E species protection and public lands health standards and can be expected to result in substantial benefits to long-term productivity but less than Alternative 2.



**Alternative 4:** These alternatives involve minor short-term uses in support of T&E species protection and public lands health standards and can be expected to result in modest benefits to long-term productivity but more than Alternative 1.

**Preferred Alternative:** These alternatives involve minor short-term uses in support of T&E species protection and public lands health standards and can be expected to result in substantial benefits to long-term productivity and similar to Alternative 3.

## 4.15 ENVIRONMENTAL JUSTICE

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, directs Federal agencies to identify and address the potential for their activities to cause disproportionately high or adverse impacts to minority or low-income populations. This section uses the results of analyses from other disciplines to determine if disproportionately high or adverse impacts to human health or the environment on minority or low-income populations are likely to occur from one or more of the following alternatives identified in Chapter 2:

- adoption of standards for public land health and guidelines for grazing management;
- conservation and recovery of threatened and endangered species;
- designation of multiple-use class for lands released from wilderness consideration;
- strategies for competitive vehicle events outside of OHV open areas including the B-to-V race course;
- elimination of landfills from public lands; and
- determination of eligibility of stream segments in the Planning Area for the National Wild and Scenic Rivers System.

The environmental justice analysis brings together the results of impact analyses from different resources such as air, land use, grazing, etc., that in turn could affect human health and the environment. If any of these analyses predict impacts to the human population in general, then an environmental justice analysis would determine if those impacts could occur in a disproportionately high or adverse manner to minority or low-income populations. The basis for making this determination in this document is the census and other data which provides information for comparison of the areas of large impacts on minority and low-income populations, as identified in the document *The Northern and Eastern Mojave Planning Area: Economic Impact Analysis* (Dean Runyan Associates, June 1998).

An adverse environmental impact is one that is unacceptable or above generally accepted norms. None of the proposals presents the potential for substantial adverse impacts to human health.



A disproportionately high environmental impact is an impact (or the risk of an impact) to a low-income or minority community that significantly exceeds the corresponding impact to the larger community (CEQ 1997, all). The EIS analysis determined firstly that the impacts that could occur to the environment would either be beneficial or they would be small in relation to the population as a whole and regionally. Secondly, no minority or low-income subsections of the populations would receive disproportionate adverse impacts.



## This Page Intentionally Left Blank







## **5.0 CONSULTATION AND COORDINATION**

### **5.1 PUBLIC INVOLVEMENT**

On August 31, 1995, a notice was sent to the public, media, agencies, and other organizations on the BLM California Desert District mailing list (about 6,000 names), describing the purpose of interagency planning covering issues within the NEMO Planning Area. On September 5, 1995, a Notice of Intent announcing the beginning of the planning process and EIS was published in the Federal Register.

Public workshops were held from September 21 through 27, 1995 at Pasadena, San Bernardino, Barstow, Baker, Needles, Ridgecrest, Independence, Lone Pine, and Furnace Creek, California, and in Las Vegas, Nevada. About 250 people attended the workshops. These workshops were used to identify issues and concerns to be addressed in the National Park Service management plans, CDCA Plan amendments, and accompanying EIS documents for the area. These public workshops were augmented by interagency scoping workshops to identify cross-jurisdictional and other issues of concern.

Ten additional public workshops were held from April 14 through 24, 1997 at the same locations as stated above. About 330 people attended the workshops. These workshops were used to identify alternative management approaches to be addressed in the EIS.

In August 1998, BLM held additional public meetings to clarify the proposals and ask for any additional issues, alternatives, or concerns, not presented in earlier scoping meetings, and present the framework for a desert tortoise conservation strategy developed that spring. The scoping process was concluded in Nov 1998.

Comments have been grouped together under the planning goals and issues to assist readers in identifying the issues that are of primary concern to them. Many of these categories reflect the various environmental resources that may be used to organize the analysis in the EIS, such as biological, cultural, and wilderness. Other categories were created to reflect the nature of the comments received.

#### **5.1.1 PLANNING PROCESS**

Objectives were generated for each element of the CDCA Plan to analyze the current management situation and develop proposals and alternatives that address specific resource and scoping issues. The BLM developed a tentative package of candidate CDCA Plan amendments based on the scoping process. Additional public input on alternatives was sought at public meetings. Based on these meetings and subsequent staff input, additional proposals and alternatives were developed for consideration, and existing proposals were further refined. Once proposals and alternatives were preliminarily developed, an interdisciplinary meeting was held to integrate proposals and alternatives.



## 5.1.2 ISSUES SUMMARY

BLM received a rich array of comments during the scoping comment period. Because the purpose of scoping is to present issues and ideas for consideration by the preparers of the EIS, it is more important to capture what has been expressed rather than how often. Consequently, a summary table has been prepared to represent the breadth and variety of comments, not their frequency.

As required by CFR 1501.7 for implementing NEPA, BLM has used the scoping process to determine the scope of issues to be addressed in the NEMO EIS. In addition, BLM land-use planning regulations at 43 CFR 1610 were also used to guide the determination of the scope of the NEMO planning effort.

Issues that are outside the NEMO planning effort fall into five categories:

- a. Issues that are not directly related to the implementation of the California Desert Protection Act;
- b. Issues that can be adequately addressed under current land use planning mechanisms without the need for additional planning;
- c. Issues that are larger in scope than the NEMO planning area and which can be better addressed at another level (e.g., CDCA-wide);
- d. Issues concerning Congressionally designated boundaries and land uses;
- e. New issues that necessitate additional plan amendments. Amendment proposals submitted after November 1997, will be considered in a subsequent amendment process.

Issues that are within the scope of the NEMO planning effort are ones that deal directly with the conservation of the Desert Tortoise or the CDPA and fall into four categories:

- a. Issues affecting public lands transferred from BLM to NPS and their relation to the California Desert Conservation Area Plan (CDCA Plan).
- b. Issues affecting public lands no longer considered for wilderness designation.
- c. Issues affecting public lands where threatened and endangered (T&E) species conservation and recovery is required. The latter is a result of the 1989 listing of the desert tortoise over a broad area of the Southwest deserts and subsequent development of a recovery plan.
- d. Issues that have emerged from scoping that are not adequately addressed in the current land-use planning documents and decisions.



Major issues that emerged as a result of the planning process and scoping are outlined in Section 1.3 of Chapter 1.

Issues and comments that were within the scope of the NEMO planning effort are grouped into categories by resource.

**Table 5-1** located at the end of this chapter lists by category the issues, comments, and concerns gathered during the scoping process and whether they are within the scope of the planning process.

## **5.2 INTERAGENCY COORDINATION AND CONSULTATION**

### **5.2.1 NATIONAL PARK SERVICE**

Interagency coordination with the National Park Service was essential at key phases during the planning process and on specific cross-jurisdictional issues. Early in the planning process, joint public and interagency scoping meetings were held to identify issues for consideration. Joint newsletters were utilized to keep the public apprised of progress in both agencies' planning efforts, including key dates.

Interagency meetings were held throughout the development of the range of alternatives on cross-cutting issues, such as joint biological team meetings, which identified and addressed potential coordination needs. The most important cross-jurisdictional issue in this document is the recovery of the East Mojave population of the Federal and State threatened desert tortoise. The strategies BLM has identified can meet recovery goals only if recovery strategies are also adopted by the Mojave National Preserve. Several of these strategies are expected to require continued interagency coordination and consultation on a local and regional level to be successfully implemented.

### **5.2.2 U.S. FISH AND WILDLIFE SERVICE**

#### **Endangered Species Act Consultation on CDCA Plan, as amended.**

The Congress specified that the purposes of the *Endangered Species Act of 1973* (Public Law 97-304), as amended, (ESA) "are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered and threatened species, and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions..." (Sec. 2(b)). The ESA states it "to be the policy of the Congress that all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this Act." (Sec. 2(c)(1)) The fulfillment of these purposes is a fundamental issue in this planning effort.

The ESA further provides that "Each Federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out



by such agency.. is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [critical] habitat of such species..." (Sec. 7(a)) By Federal regulations (*Code of Federal Regulations, Volume 50, Part 402*) implementing the provisions of Section 7 of the ESA, the BLM and other Federal agencies must *consult* with the USFWS on projects, plans, and actions that may negatively affect a threatened or endangered species. The USFWS then issues a *biological opinion* relative to jeopardy and adverse modification. A similar review referred to, as a *conference* is required for species that are proposed for Federal listing.

In earlier years, consultations were not conducted on land use plans, such as the CDCA Plan. The courts have determined that consultations are required on land-use plans. Therefore, as a part of this planning process, the BLM will formally consult and confer with USFWS on the affects of the NEMO Plan and the CDCA Plan in the NEMO Planning Area as modified by the NEMO plan on threatened and endangered species.

The BLM has determined that the following federally-listed species may be affected by the CDCA Plan in the NEMO Planning Area:

desert tortoise (threatened) and critical habitat,  
Inyo California towhee (threatened)  
southwestern willow flycatcher (endangered),  
least Bell's vireo (endangered),  
Amargosa vole (endangered) and critical habitat,  
spring-loving centaury (threatened),  
Ash Meadows gumplant (threatened) and critical habitat, and  
Amargosa niterwort (endangered) and critical habitat.

This Plan and Draft EIS together with a CDCA Plan edited with amendments and various other supporting documents (e.g., *Current Desert Tortoise Management Situation in Northern and Eastern Mojave Planning Area*) will provide the necessary information to conduct the consultation/conference.

### **Programmatic Consultation on Desert Tortoise**

The BLM currently has a number of biological opinions from USFWS that cover a group of activities or a program; such biological opinions are referred to as *programmatic biological opinions*. Each covers only the species addressed in the consultation. In the NEMO Planning Area, the BLM currently has four biological opinions addressing desert tortoise for the following classes of activity: small mining operations (under 10 ac.), small disturbances (under 2 ac.), cattle grazing, and dual-sport motorcycle events. Many other biological opinions cover individual projects on a case-by-case basis.

The BLM proposes to consult with USFWS on the CDCA Plan, as amended by the NEMO Plan amendments, and obtain a biological opinion covering most projects affecting desert tortoise or its critical habitat. The programmatic consultation will not cover the following:



Projects that disturb more than 100 acres (Preferred Alternative) except transmission lines and pipe lines that do not require an EIS or Plan Amendment;  
Projects that require an EIS; or  
Projects that require a CDCA Plan Amendment.

Standard mitigation measures are presented in Appendix A for the programmatic biological opinion. These measures would be applied to projects to mitigate impacts on desert tortoise and to compensate for residual impacts to tortoise habitat after mitigation. Further formal consultation with USFWS would not be required for covered projects, but a reporting and review process is included. The programmatic biological opinion will specify an allowable *incidental take* (i.e., take incidental to an otherwise legal activity) for covered projects.

The BLM also proposes to obtain a *programmatic* biological opinion for desert tortoise on projects that may be proposed in the future. Standard mitigation measures are presented in Appendix A for application on these projects to mitigate for impacts and to compensate for residual impacts to its habitat after mitigation. Further formal consultation would not be required for covered projects, but a reporting and review process by USFWS is included. The programmatic biological opinion will also specify an allowable *incidental take* (i.e., incidental to an otherwise legal activity) for the CDCA Plan and for covered projects. The programmatic consultation will not cover the following:

Projects that disturb more than  $n$  acres (where  $n = 50, 100, \text{ or } 200$  depending on alternative) except transmission lines and pipe lines that do not require an EIS or Plan Amendment;  
Projects that require an EIS; or  
Projects that require a CDCA Plan Amendment.

### 5.2.3 SHPO/CA-SHPO

State Historic Preservation Office consultation has been initiated consistent with Section II C of the State protocol agreement between BLM and SHPO for the NEMO Planning Area. SHPO was requested to provide comments on issues and alternatives specific to historic and prehistoric properties in the Planning Area. Information received has been taken in to account in our analysis and decision making process. Impacts to cultural resources are also considered in the context of the National Environmental Policy Act, and measures are taken to avoid or mitigate impacts, where appropriate.

### 5.2.4 OTHER BIOREGIONAL PLANNING

Coordination between the NEMO, West Mojave and NECO Planning Efforts has taken place to address consistency in cross-jurisdictional issues for planning throughout the



California Desert District. These three-plan coordination meetings have been occurring since scoping was completed. The NECO Planning Area is twice the size of NEMO, and is adjacent to NEMO, south of I-40. NEMO and NECO share adjoining boundaries of extensive desert tortoise habitat across I-40. NECO's habitat is in two other desert tortoise recovery units. The WEMO Planning Area is about four times the size of NEMO and abuts NEMO on most of the western boundary of the planning area. Desert tortoise conservation and recovery and competitive sport speed events are major cross-jurisdictional coordination issues.

### **5.3 NATIVE AMERICAN CONSULTATION**

Federal consultation for the NEMO planning area was initiated in 1997, and culminated in a meeting attended by Fort Mojave, Chemehuevi, and Timbisha tribal representatives to provide comments and concerns regarding religious, heritage values, or traditional properties that they may have information on which may be affected by the planning effort. The Timbisha tribe had also concurrently initiated a focused and separate planning effort to address the issue of provision and administration of tribal lands, including portions of the NEMO planning area. Issues identified at the July, 1997 meeting for consideration during analysis included the following:

- (1) Assure tribal vehicle access to public lands and give tribes special consideration;
- (2) Gives tribes timely notification of burials and the opportunity to participate in burial location;
- (3) Identify sacred sites more specifically by tribal affiliation;
- (4) Evaluate the potential for loss of water from future development;
- (5) Thoroughly analyze any potential use of the planning area for radioactive waste
- (6) Consider leaving human remains in place.

Additional letters were subsequently sent out to these tribes, and to the Las Vegas Piutes, requesting further comment on the planning effort. Information received has been taken into account in our analysis and decision-making process.



## Persons / Agencies Receiving Document



Northern & Eastern Mojave Draft Environmental Impact Statement  
Chapter V: Consultation and Coordination

Name		State	Zip
Adam	P.I.	CA.	90232
Aguayo	Rick	CA.	92307
Ahamakav	Cultural Society	AZ.	86440
Aklufi	Joseph S.	CA.	92501
Allen	Janice	CA.	93549
Allen	Harriet& Howard	CA	91977
Allison	David L.	UT.	84026
Almas	Bill & La Vella	CA.	92366
Ampspach	Allen J.	AZ.	85344
Amster	A.B.	CA.	93556
Anderson	Ilene	CA.	90046
Anderson	O.J.	CA.	92405-1901
Andreas	Mary Ann	CA.	92220
Arbogast	Jim	CA.	92804
Avery	Hal	NV.	89108
Axtell	Dwight	CA.	93527
Baderian	Robert C.	CA.	91109
Bailey	Barbara	CA.	92340-0548
Bailey	Brent	Canad	V6E3X2
		a	
Ball	Mary	NV.	89003
Ballow	E. Jeff	CA.	93010-1932
Barnes	George	CA	94306-2617
Barton	Cynthia	CA.	93562
Bartsch	Robert W.	CA.	91107
Beardslee	Marilyn	CA.	93301
Beauchay	R. Mitchel	CA.	91950-6010
Bergman	Jim	CA.	93522
Bernath	George	NV.	89046
Betterley	William A.	CA.	92345
Big Pine	Chamber of Commerce	CA.	93513
Blair	Rob	CA.	92332
Blake	Monk	NV.	89130
Bledsoe	Sam	CA.	95606
Bleich	Vernon	CA.	93514
Blockley	Marge	NV.	89005
Borden	Jack	NV.	89101
Boxer	Honorable Barbara	D.C.	20510
Bouman	Arlene	CA.	93515-0966
Brabyn	John	CA	94941
Bradford	A.	CA	95023
Brady	Joseph W.	CA.	92393-2710
Brauner	Kalmar	WA.	98109-1822
Brengel	Kristen	D.C.	20036
Brenner	David A.	CA.	93033
Britton	Robert G.	CA.	91010
Brown	Brian	CA.	92384
Brown	Don & Joy	OR.	97355
Brown	Jim	NM.	87125
Brown	Patricia	CA.	93514
Brown	Warren	D.C.	20240
Browne	Andrew C.	CA.	94028-7125
Budlong	Tom	CA.	90049
Burge	Betty L.	NV.	89119



Northern & Eastern Mojave Draft Environmental Impact Statement  
Chapter V: Consultation and Coordination

Burgess	Jeff	AZ. 85283
Burk	Peter & Joyce	CA. 92312
Burns	Isabella	CA. 91754
Bybee	David E.	WA. 98665-1300
Campbell	Tom	CA. 93555
Campbell	R.	NV. 89108
Cantou	Pierre	AZ. 85004
Capote	Mario R.	CA. 92325
Carey	W.E.	NV. 89142
Carmicino	James & Kay	CA. 91101
Carothers	Dr. John H.	CA. 95003
Carpenter	Steven	CA. 91355-1847
Carrell	Patricia L.	CA. 92324
California Department of Fish and Game		CA. 93514
Casebier	Dennis	CA. 92332-9799
Cassella	Michelle	CA. 92570
Chase	Rocky	NV. 89003
Clark	Lois	CA. 92309
Clark	Clifford H.	CA. 93483
Claypool	Bill & Nita	CA. 92363
Cliffe	Vernon	CA. 91024
Clodt	Richard	CA. 93527
Cohen	Phillipe S.	CA. 94305-5020
Condon	Ray	CA. 93505
Conti	Dick	CA. 90041
Cooper	Dan	CA. 92286
Cooper	Derek	CA. 93555
Cornelius	Betty L.	AZ. 85344
Counts	Jerry	CA. 91303
Crites	Buford	CA. 92260-2578
Daerr	Ron	CA. 92408-3220
Dahlia	Timothy	CA. 90042-2308
Daley	Trevor J.	CA. 90025
David	Lois	CA. 92057-2605
Davidson	Ian	CA. 92501
Davis	Donna S.	CA. 92340
Davis	Kathy	CA. 92415-0110
Davis	Mark	CA. 93546
Davis	Sheri	CA. 92408
Davison	Pat	CA. 96160
Dawson	D.L.	NV. 89019
Dayak	Tom	CA. 93514
Denner	Roy	CA. 92040
Department Of The Interior	ATTN OEPR DEIS	DC 20240
	Review	
Derrick	George	CA. 93513
Dewenter	David	HI. 96749
Dierdorff	Irv	CA. 92646-6018
Dobbins	Phyllis	CA. 92323
Doell	Janet	CA. 94801
Dombrowski	Mike	CA. 92345
Dorame	Michael A.	CA. 93526
Duncan	Tim	CA. 92363
Duro	Henry	CA. 92346
Early	G. C/o BLM Lands	CA. 92103



Northern & Eastern Mojave Draft Environmental Impact Statement  
Chapter V: Consultation and Coordination

Eir Review Committee	Foundation	CA. 92138
Elliott	Heather	NV. 89701
Ellis	Mark	CA. 91355
Emmerich	Kevin	CA. 92328
Engelder	Roger	CA. 92610
Ervin	Christine G.	CA. 92653-1144
Ervin	Nick	CA. 92117
Esquerra	Todd	NV. 89119
Esquerra	Ralph	AZ. 85228
Esteves	Pauline	CA. 92328
Everly	Clarence	CA. 92311
Fairclough	Christopher	CA. 92384
Feinstein	Honorable Dianne	D.C. 20510
Ferguson	Bonnie	CA. 93536
Ferguson	Jeri	CA. 92392
Flanders	Paul	CA. 91007
Franklin	Kathleen	CA. 93534
Friesema	Paul	IL. 60202
Fulton	Robert	CA. 92309
Furnace Creek Library		CA. 92328
Gates	Mike	CA. 92507
Gautsch	Joe	CA. 92866-1216
Goodfrey	Jeffery G.	CA. 93384-0160
Gordan	Richard J.	AK. 99802
Goss	Kathy	CA. 93522
Gould	Kim	CA. 91770
Gracey	Bob	CA. 93526
Graham	Robert & Maria	CA. 92389
Grandy	Glen	CA. 91107
Green	Andy	CA. 93561-2142
Greenberg	Paul H.	CA. 91364
Gregory	Ron	NV. 89155-1741
Haitt	John	NV. 89123
Haldeman	Richard	CA. 92592-8687
Hambleton	Carroll "Butch"	CA. 93526
Hamill	John	CA. 92311
Hancock	Ginger	CA. 92365
Hanna	PMB #106	AZ. 86001-6317
Harlow	Stanley	CA. 92312
Haussier	Warren M.	CA. 91103-3553
Haussler	Michael	CA. 91020-1861
Haye	Stan & Jeanie	CA. 93555
Hayes	Gary	NV. 89120
Heathcote	Robert	CA. 93555
Heffner	Dave & Diane	CA. 93240
Heindel	Tom & Jo	CA. 93513
Herfkens	Esperaldo	CA. 91367
Herron	Willis	CA. 92307
Hewitt	Ward	NV. 89046-1600
Hiatt	John	NV. 89123
Hickman	Sue	CA. 92398
Hillier	Gerry	CA. 92402-0480
Hines	James	CA. 93006
Hippert	Andy	CA. 90630
Hoar	Brooks	CA. 92660-4738



Northern & Eastern Mojave Draft Environmental Impact Statement  
Chapter V: Consultation and Coordination

Holland	Jim	NV. 89005
Hollis	Gary	NV. 89048
Holloway	Charles C.	CA. 90012
Holman	John E.	NV. 89015
Horne	Jeff	CA. 92345-7243
Horstkotte	Jack	CA. 90606-1750
Hribar	B.	CA. 90039
Hughes	Elden	CA 90604
Hurst	Chuck	CA. 92258
Inyo County	Planning Dept	CA. 93526
Jackson	Tom	CA. 92363
Janson	Richard	CA. 90808-1445
Jaramillo	Sergio M.	NV. 89512
Jennings	Craig	CA. 93105
Jenson	Grant	CA. 94296-001
Johnson	Kenneth	CA. 92543
Jones	Leone	CA. 95747
Jones	William	CA. 90014
Jones	Denise	CA. 95814
June	Mike	CA. 92264
Kerber	John	CA. 91007
Kilpatrick	Robert	CA. 92392
King	Duncan	CA. 95014
Kirk	David	CO. 80302
Kistler	Robert C.	CA. 91355-1847
Kreuper	Harry	CA. 92407-3728
Kulesza	Gene	CA. 92517
LaClaire	Charles	CA. 92307
Ladd	Dennis & Mary	CA. 93555
Lamos	Paul	CA. 93545
Larson	Keith	CA. 91342
Lease	T.W.	NV. 89109-3356
Leivas, Sr.	Matthew	CA. 92363
Lemon	E.D.	CA. 93546-0415
Lewis	Honorable Jerry	CA. 92373
Lewis	Jimmy	CA. 92663
Briggs	C.R.	CA. 93592
Lynch	Willy	WA. 98230
Macey	Jim	CA. 93530
Maddock	Laurra	CA. 92677
Madueno	Patricia	CA. 92363
Mann	Minnie	AZ. 85634
Mann	Nancy	CA. 93403-8106
Marston	Dick	CA. 92649
Martell	David	CA. 92371
Martin	Bill	CA 91701
Massey Sr.	Dallas	AZ. 85941
McKernan	Robert	CA. 92374
McNight	Jerry	NV. 89049
Medica	Phill	NV. 89108
Mendez	Rene L., CAO	CA. 93526
Mendez	Rene L.	CA. 93526
Merk	Sam	CA 93555-7519
Merk	Sophia A.	CA. 93555
Meyer	Deanne	CA. 92309
Milanovich	Richard	CA 92262



Northern & Eastern Mojave Draft Environmental Impact Statement  
Chapter V: Consultation and Coordination

Miller	John	CA. 92345
Miller	David	CA. 93274
Miller	Leroy	CA. 92646
Miller	Charles	CA. 91024
Mitchell	John H.	CA. 94705
Mitchell	Paul A.	CA. 93654-2428
Molcar	Richard	WA. 98240
Moore	A.R.	CA. 92124
Murchie	Donald	CA. 90405
Nagy	Kenneth	CA. 90095-1606
Nason	Geoff	CA. 92366
Nataly	Fred	NV. 89109
Naxos Resources	USA Ltd.	NV. 89048
Nevada Division	of State Lands	NV. 89706-0857
Nevada Division	of Wildlife	NV. 89108
Newbro	Bill	CA. 91504
Newton	Janice	CA. 92328
Norris	James	CA. 93105-4449
Office of Planning and Research	State Clearing House	CA. 95814
Olivas	Tom	CA. 92549
Orndoff	Jim	NV. 89108
Orr	Robert J.	CA. 95814
Ott	Nancy L.	CA. 92345
Overson	Clay	CA. 92323
Painter	Elizabeth	CA. 93105
Papouchis	Christopher	CA. 95822
Parrish	Conrad	CO. 80401
Parrish	D.W.	CA. 92399
Parry	Tom	CA. 92363
Patchen	Marvin	CA. 92036
Paterson	Loro	CA. 94020
Pauli	Andy DFG	CA. 92308-7066
Paulk	Herman A.	CA. 92407-2213
Pearson	Daniel	CA. 91770
Peckham	Alan	NV. 89120-3304
Peter	Ramond J.	CA. 91423-1242
Picardo	Kevin	NV. 89193-8435
Pilon	Jim	CA. 91342
Pinto	J.D.	CA. 92521
Praisler	Tom	CA. 95310
Prather	David	PA. 16354-8822
Presch	Dr. William	CA. 92834
Price	Beverly B.	CA. 91604
Priestel	Scott	CA. 92311-2888
Prince	Dan	NV. 89014
Pyott	William	AZ. 85366-1000
Pyramid Lake	Paiute Tribe	NV. 89424
Quintana	Ernest	CA. 92277
Racine	Denyse	CA. 93514
Raihle	Mike	CA. 92415-0850
Rauschkolb	Mike	CA. 91355
Reddy	J.M.	CA. 92356
Reese	David K.	CA. 93522
Reese	Steven	CA. 93522
Reim	Kenneth	NV. 89134-7814
Rhoades	Ed & Irene	CA. 92408



Northern & Eastern Mojave Draft Environmental Impact Statement  
Chapter V: Consultation and Coordination

Richaros	Robin	CA. 92363
Rister	Randy	CA. 92243
Ritzlaff	Vern	NV. 89121
Robinette	Rob	CA. 93535
Romerro	Miriam	NV. 89134-7875
Roni	Steven	IL. 61611
Ross	Stephen	CA. 91107
Rotgers	Christine G.	CA. 91320
Rupe	Donald R.	CA. 92363
Rylaarsdam	Cornel	CA. 90706
Sawyer	Dr. John H.	CA 95521
Schmidt	Fred	CO. 80523-1019
Schmidt	Steven	CA. 92112
Schmidt	Earl	CA. 94301
Schuette	Henry	CA. 93555
Schulz	Wayne	CA. 95338
Schweiker	Roy	NH. 3301
Seaton	Bruce	CA. 90630
Sesher	Thada B.	CA 91722-3534
Shockley	Mel	CA. 92404
Sidorick	Frankie Rae	CA. 92408
Simpson	Robert J.	CA. 92404
Slater	David	CA. 93555
Smith	Debbie	CA. 93555
Soto	William B.	CA. 92870
Sowell	John	CO. 81231
Spetzvogel	Edward	MO. 63130-4899
Spining	Richard	CA. 90622
Sorrells	Susan	CA 92384
Stanley	Valerie	MD. 20850
Stapp Mining		CA. 92405
Stein	Glenn	CA. 93514
Steinmetz	Jeffery G.	NV. 89108
Stephenson	Bobbie	CA. 92117-3653
Stewart	Greg	CA. 92651
Stirling	Edward	AZ. 85306-1729
Stone	John	CA. 92396
Stone	Syd	NV. 89108
Stuart	Norm	CA. 92392
Swanson	H.N. SPA	NV. 89448
Swedlove	Jerome	CA. 92405
Tabor	Steve	CO. 80525
Targa	James	CA. 95215-9595
Tarble	Jan	CA. 90024
Taylor- Jarvis	Bobbie	NV. 89041-6279
Tecopa Community Center		CA 92389
Terrell	Tim	CA. 92277
Thomas	Kathryn	az. 86011
Thomas	Terry R.	CA. 92621-5919
Todd	David	AZ. 86405-1769
Tolford	Hugh C.	CA. 91401-5722
Tomlinson	Bill & La Vella	CA. 92311
Tonkiss	David	CA. 91208-2411
Tovar	Joni	CA. 93550
Tracy	Karen D.D.S.	CA. 92252



Northern & Eastern Mojave Draft Environmental Impact Statement  
Chapter V: Consultation and Coordination

Tremor	John W. Ph.D.	CA. 95070
Trent	Robert	CA. 92028
Trinko	Mark	NV. 89110
Turner	Kent	NV. 89005
Urbanek	Mike	CA. 92335
Veale	Barbara	CA. 92356
Venola	Jennifer	CA. 93555
Walch	Tom	CA. 92317
Waldheim	Ed & Linda	CA. 91214
Walker	George	CA. 92311
Wallace	A. Brian	NV. 89410
Wallasch	Edmund	CA. 91214
Walters	T.	CA. 92340
Waltz	Bill	NV. 89020
Weaver	Lewis	CA. 92311
Weber	Chuck	CA. 95051
Weiner	Terry	CA. 92116-1167
Westman	Pete	CA. 92395-2710
Wheat	Frank	CA. 91108
Wheat	F.	CA. 91108
Wild Burro Rescue		WA. 98570
Williams	Lewis	CA. 92307
Woodruff	Patricia	CA. 94611
Wright	William E.	CA. 93513
Wuerthner	George	OR. 97403
Wyss	Joanna	CA. 95462-0019
Yonge	Sandra	CA. 93545
Young	Glenn	CA. 93530
Zaehst	Bob	NV. 89046
Zimmerman	John	UT. 84105
Zogg	Paul	CO. 80302
County of Inyo	Planning Department	CA. 93526
County of San Bernardino	Planning Department	CA. 92307
County of Inyo	Board of Supervisors	CA. 93526
California State Parks		CA. 93534
Bureau of Indian Affairs		CA. 92363
California State Lands		CA. 95814
Commission		
California Department of Parks and Recreation		CA. 94296-0001
Army Corp of Engineers		CA. 90053
Environmental Protection Agency		CA. 94105
Environmental Protection Agency		CA. 94105
U.S. Environmental Protection Agency	Office of Federal Activities	D.C. 20460
U.S. Fish & Wildlife Service		CA. 93003
Branch of Mineral Assessment	Bureau of Mines	D.C. 20240
Western Field Office	Bureau of Mines, MS 5100	WA. 99202
Bureau of Reclamation	Denver Federal Center (D-150)	CO. 80225-0007
Chief, Division of Environmental Coordination	U.S. Fish and Wildlife Service	D.C. 20240
Division of Environmental Compliance (762)	National Park Service	D.C. 20240
Environmental Affairs Program	U.S. Geological Survey	VA. 22092



Northern & Eastern Mojave Draft Environmental Impact Statement  
Chapter V: Consultation and Coordination

Chief, Planning Division	South Pacific Division	CA 94111	
Office of Environmental Compliance (EH-23)	Department of Energy	D.C. 20585	
Environmental Review Coordinator	EPA Region IX	CA 94105	
Victorville Public Library		CA. 92392	
Adelanto Public Library		CA. 92301	
Apple Valley Public Library		CA. 92307	
Barstow Public Library		CA. 92311	
Lucerne Valley Public Library		CA. 92356	
Inyo County Library		CA 93526	
Ridgecrest Public Library		CA 93555	
Needles Public Library		CA 92363	
Lone Pine Library		CA 93545	
Tecopa Library		CA. 92389	
Pasadena Public Library		CA 91101	
Pahrump Public Library		NV. 89041	
Las Vegas Public Library		NV. 89101	
County of Inyo	Planning Department	Independence,	CA. 93526
County of San Bernardino	Planning Department	Apple Valley,	CA. 92307
County of Inyo	Board of Supervisors	Independence,	CA. 93526
California State Parks		Lancaster,	CA. 93534
Bureau of Indian Affairs		Needles,	CA 92363
California State Lands Commission		Sacramento,	CA. 95814
California Department of Parks and Recreation		Sacramento,	CA. 94296-0001
Army Corp of Engineers		Los Angeles,	CA. 90053
Environmental Protection Agency		San Francisco,	CA. 94105
Environmental Protection Agency		San Francisco,	CA 94105
U.S. Environmental Protection Agency	Office of Federal Activities	Washington	D.C. 20460
U.S Fish & Wildlife Service		Ventura,	CA. 93003
Branch of Mineral Assessment	Bureau of Mines	Washington	D.C. 20240
Western Field Office	Bureau of Mines, MS 5100	Spokane,	WA. 99202
Bureau of Reclamation	Denver Federal Center (D-150)	Denver,	CO. 80225-0007
Chief, Division of Environmental Coordination	U.S. Fish and Wildlife Service	Washington	D.C. 20240
Division of Environmental Compliance (762)	National Park Service	Washington	D.C. 20240
Environmental Affairs Program	U.S. Geological Survey	Reston,	VA. 22092
Chief, Planning Division	South Pacific Division	San Francisco,	CA 94111
Office of Environmental Compliance (EH-23)	Department of Energy	Washington	D.C. 20585
Environmental Review Coordinator	EPA Region IX	San Francisco,	CA 94105



**TABLE 5-1: NEMO SCOPING COMMENTS**

NEMO SCOPING COMMENTS				
Comment	Element & Planning Issue	Within Scope	How Addressed	
1. Cultural Issues				
Any MUC Boundary changes needed	Cultural Issue 1: Need for management zoning adjustments	Y	MUC Amendments Proposed	
Establish policies for the preservation, protection, interpretation and the appropriateness of revealing the locations of cultural resources	Cultural Issue 2: Adequacy of existing CDCA guidance for cultural resource management	N	Already addressed in existing planning documents and Bureau Policies: Admin workload issue.	
Is our protection strategy for cultural sites adequate? Of Particular concern are those identified and accessible to the public.(i.e., i.d., those that should be nominated, schedule nominations, and determine contributing portions upon identification.	Cultural Issue 3: Need to keep management options open for problem areas needing reclamation	N	Already addressed. Where not on the NRHP, addressed with site specific analysis when identified	
Distinguish between historic abandoned mine sites that need protection and sites that are providing garbage dumping grounds and safety hazards	Cultural Issue 4: Need for protection of cultural resources in wilderness.	N	Outside scope: May be addressed in future wilderness management planning.	
SBmtg: Will BLM Destroy historic structures.	Cultural Issue 4: Need for protection of Native American sites.	N	May be addressed under existing guidance, using separate consultation and agreement with Native American tribes.	
How do we deal with historic ROW and ways in wilderness?	Cultural Issue 5: Need for more systematic and proactive approach to protection and/or documentation of significant (including NRHP eligible) Properties.	N	Beyond scope of this plan: T&E and CDPA focus. Also admin/workload issue. Importance of many sites already established through previous planning documents.	
Have we addressed and is our protection strategy for Native American Tribal sites adequate?	Cultural Issue 6: Need for additional site-specific management strategies	N	Beyond the scope of this plan: T&E and CDPA Only..	
Need to develop a strategic cultural program (beyond ad hoc and reactive focus) e.g. mitigation caching and other creative methods to meet goals, long term strategies for surface objects, and to gather and assess historical context.	Cultural Issue 7: Coordination Strategies	N	No specific issues identified. If needed, specific historic features may be addressed in future activity level planning.	
Need to follow through on National Register process.				
How do we deal with potential impacts to features that are historically significant at the time of designation (i.e. Mines, ROW's, ways and structures)				
PSkr I.d. on ground, map, interpretation and documented history. 20 Mule Team Wagon Road through Death Valley floor and Panamint Mountains.				
NePS / PSkr: Address, ID, Interpret and possible restoration of some cultural, significant cultural resources (T&T, Patton Military sites, WPA Guzzler sites, trails, cultural landscapes, Dinosaur Trackway.				
AC11: When do the Mojave Road, T&T RR grade and other eligible properties retain integrity, what is the proper historical designation and is there a need for restoration?				
NePS: I.D. Cultural elements to be restored such as certain features along historical Route 66.				
? Do we adequately manage significant linear historic features (Across Jurisdictional Boundaries)				
2. Native American Element				
AC 52: Any MUC Boundary changes needed	Native American Issue 1: Need for management zoning adjustments	Y	MUC Change amendments	



## NEMO SCOPING COMMENTS

Comment	Element & Planning Issue	Within Scope	How Addressed
NePS : Where/what are the traditional native land uses e.g. Mojave, Chemehuevi, Timbisha, Shoshone?	<b>Native American Issue 2:</b> Adequacy of existing CDCA guidance for Native American resource management.	N	Already addressed in existing planning documents and Bureau policies.
NePS: How should areas with Native American spiritual values be managed (e.g. Public access)?	<b>Native American Issue 3:</b> Need for additional site-specific management strategies.	N	Beyond the scope of this plan: T&E and CDCA focus
Is Native American rock art being adequately protected and interpreted?	<b>Native American Issue 4:</b> Coordination Strategies	N	Coordination and consultation will occur. Affects not anticipated at this time. If any proposals and alternatives affect Native American sites or access additional coordination will occur.
? Are we adequately recognizing them and providing for cooperative management through our existing agreements?			
C. What, if any are the problems associated with these uses?			
<b>3. Wildlife Element</b>			
AC52: Any MUC Changes Needed	<b>Wildlife Issue 1:</b> Need for management zoning adjustments	Y	MUC Change amendments
AC2,Pssgm,AC3, AC8, FWS addressed recovery objectives for the Desert tortoise established in the recovery plan & designate DWMAs. Develop a mgt strategy for DT in the wildlife management area.			
PSmt: Do cost/benefit analysis of DT protection measures – focus on effective measures with best B/C ratios.			
AC6: Minimize habitat fragmentation			
AC19: Consider design of additional RNAs for DT/habitat.			
PSsgm: Include a large portion of Ivanpah Valley in DT Mgt. Area, Cima Lava fields are not best DT habitat.	<b>Wildlife Issue 2:</b> Need to address Desert Tortoise listing / recovery	Y	Plan Amendments and Desert Tortoise Conservation Strategy are addressing specific issues.
AC9: How will forage be allocated, in particular in DWMAs.			
AC13: What are standards to determine if research proposals in DT recovery areas are appropriate.			
AC19: Consider design of additional RNAs for tortoise habitat within grazing allotments and possibly within open areas.			
Pssgm: Include portions of Lava field in DT Management area			
AC9: Per BO			
AC13: Initiate study on grazing impacts to desert perennial grasses			
SBmtg: High quality DT habitat should be assessed by vegetative correlation.			
PasMtg: Address fencing for DT			
PasMtg: DT recovery, How will we know when we get there? – How long is DT recovery – What comes next when recovery is achieved? – Did you identify impacts to DT from raptors and other birds e.g. Raven predation and develop strategies to manage thewse impacts?	<b>Wildlife Issue 2: Continued</b>	Y	See Above
?: Consider strategies that provide economic incentives to protect DT.			
?: What effects will the Ivanpah airport have on the area?			
?: Include public education on land ethics			



## NEMO SCOPING COMMENTS

Comment	Element & Planning Issue	Within Scope	How Addressed
AC7: Implement DT and Mojave Tui Chub recovery plans	<b>Wildlife Issue 3:</b> Need to Address other T&E protection / Recovery	Y	Where T&E are found to occur , ACECs are evaluated.
NePS: Also Amargosa Vole recovery plan			
AC1, AC15, PSsgm: Develop a mgt strategy for other sensitive species and areas of species richness to maintain and protect (Habitat VS Species planning)			
AC4: Plan mining activities and mine reclamation strategies that promotes and protects bat populations.	<b>Wildlife Issue 4:</b> Need to address other sensitive species protection.	Y	MUC Change Amendments
PSsgm: Evaluate the potential to restore native species (Pronghorn antelope, Wolf)			
Pske: Remove all exotic species including Chucker	<b>Wildlife Issue 5:</b> Need for restoration of native species and elimination of exotics.	Y	Addressed in the context of T&E species. ACEC proposals only
PSsgm: Reexamine guzzlers as a viable wildlife management tool before installing, maintaining additional guzzlers, include impacts on DT and native / non-native species			
Psfw: Ibid in wilderness areas unless they are important biologically and can be maintained w/o vehicles.	<b>Wildlife issue 6:</b> Need for additional guidance on guzzler management	Y	To the extent it is an issue for DT conservation, it is addressed in this planning effort. Wilderness issues addressed through separate wilderness planning & policy annexes
Pskd: Maintain CDFG access to guzzlers including wilderness.			
AC33: Provide long-term watershed strategy for Amargosa Pupfish and other species			
Psjw: Need baseline studies of wetland ecosystem, desert fishes, springsnails, and associated invertebrates. Populations should be maintained at 100% of potential	<b>Wildlife issue 7:</b> Need for additional site-specific management strategies	Y	Part of the ACEC proposal for Amargosa
<b>4. Vegetation Element</b>			
AC52: Any MUC Boundary changes needed?	<b>Veg Issue 1:</b> Need for Management zoning adjustments	Y	MUC amendment proposals
Pssgm: Identify unique or UPA in planning area (e.g. red gramma grasslands, white fir forests) & protect more pristine areas with populations.			
AC31: Populations of white fir and others on "Sky Islands" need special attention and additional study	<b>Veg issue 2:</b> Need to address specific sensitive habitat / recovery	Y	ACEC proposal for T&E. Some of the White Fir population is included in one of the ACEC expansion proposals
NePS: Dolomite formations also host many endemic plants and should be evaluated			
PsSh: Protect old growth vegetation (e.g. Yuccas) from damage			
AC4: To what extent is type conversion occurring? What effect does fire mgt strategies have on this?			
Peswc: Protect and recover native biodiversity	<b>Veg issue 3:</b> Need for restoration of native species and ecosystems and elimination of exotics.	Y	To the extent that these are issues for DT conservation. May be addressed subsequently in other ACEC management plans if designated.
NePS: Consider options for controlling exotic species.			
Pssgm: Consider Vegetation restoration of lands (abandon, developments, like mines, homesteads, corals)			
AC3: Evaluate impacts from GW depletion on habitat health. What is the threshold of draw-down and what can be done to help conserve water dependant habitats?	<b>Veg issue 4:</b> Need to protect riparian / wetland habitats	Y	Indirectly addressed through watershed ACEC proposal. Specific strategies and impacts would be evaluated subsequently during ACEC management planning.
<b>5. Wilderness Element</b>			
AC52: Any MUC boundary changes needed? (e.g. areas released that are default MUC L)	<b>Wilderness issue 1:</b> Need for management zoning adjustments	Y	MUC amendment proposals for "released" lands no longer under wilderness review



## NEMO SCOPING COMMENTS

Comment	Element & Planning Issue	Within Scope	How Addressed
AC2: Identify and designate specific access points and/or staging areas horse loading, hunter and hiker parking	<b>Wilderness issue 2:</b> Need for additional facilities at wilderness boundaries	N	Addressed under separate wilderness planning process
AC22: Identify and recommend needed boundary adjustments	<b>Wilderness issue 3:</b> Need for wilderness boundary adjustment recommendations	N	Addressed in a separate process for each wilderness
AC6, AC3, NePS: Consider recommending amendment of CDPA to allow motorized use of the "Heritage" trail or rerouting trail. Are there other well used trails with breaks due to CDPA that we should address?	<b>Wilderness issue 4:</b> Need to amend wilderness use parameters	N	Outside the scope of T&E conservation or CDPA implementation and coordination. May be addressed in separate process for each wilderness.
Pssh: Boundary adjustments are inappropriate as part of this planning effort			
Identify minimum requirements for access in wilderness	<b>Wilderness issue 5:</b> Need for wilderness guidance clarification	N	Addressed through separate wilderness planning & policy annexes
AC4, AC^AC10: Provide access to private lands & authorized activities(e.g. grazing, utilities, valid mining claims) in wilderness	<b>Wilderness issue 6:</b> Need for access to private lands & permitted activities.	Y	Addressed in route designation strategy for DT critical habitat.
?: What degree/type of access? (refer to CDPA).			
NePS: Address wilderness Mgt. Guidelines re: Maintenance and installation of big & small game guzzlers.	<b>Wilderness issue 7:</b> Define what does/does not promote wilderness values.	N	Outside the scope of this planning effort.
?: What is our fire management strategy in wilderness?			
AC82: What is the policy on tagging wildlife or simular research-related practice?			
AC32:What additional steps should we take to protect the scenic quality of visitor use corridors?			
AC6: I.D. and protect high visual quality viewsheds including those from highways (e.g. from billboards, signs). Should we relocate sand & gravel pits away from wilderness viewsheds?	<b>Wilderness issue 8:</b> Need for additional guidance to protect/maintain scenic resources.	N	Outside the scope of this planning effort.
AC30, PSsgm: Look at noise and visual Mgt. Strategy, with emphasis on (reducing) low-level aircraft and artificial light sources.			
AC10: What visual reclamation standards should we use for mining disturbances?			
AC11: To what degree do we plan to reclaim closed routes?			
Pssgm: Reduce plane contrails over wilderness			
AC4: Is our existing hiking trail network adequate (more,less,ok)			
AC2: Should camping areas in wilderness or no camping zones along open routes be designated?	<b>Wilderness issue 9:</b> Need for additional recreation management / guidance.	N	Outside the scope of this planning effort. Specific wilderness planning is a separate process.
AC3: Should we look at permitting and/or group size limits?			
AC20: Should there be additional restrictions on campfires in wilderness?			
?: What are our route signage needs?			
?: Providing information to the public on and enforcement of route designation decisions.	<b>Wilderness issue 10:</b> Need for public information and enforcement strategy	N	Outside the scope of this planning effort. Specific wilderness planning is a separate process.



## NEMO SCOPING COMMENTS

Comment	Element & Planning Issue	Within Scope	How Addressed
? : How can travel corridors through gateway communities compliment the goals and missions of adjacent Federal land while gaining economic benefits to the communities? Joint marketing strategies.	<b>Wilderness issue 11:</b> Coordination strategies	N	Outside the scope of this planning process.
<b>6. Wild Horse and Burro Element</b>			
AC52: Any MUC/boundary changes?	<b>WH&amp;B issue 1:</b> Need for mgt. Zoning adjustments	Y	WH&B herd mgt. Area adjustments are I.D.ed where land is no longer managed by BLM or in conjunction with DT conservation.
NePS: Determine appropriate management policies for each area/sub-unit.			
Pssh: Immediately reduce burro populations to the BLM HMA levels in new NPS areas. Plan to zero out these populations within NPS lands.	<b>WH&amp;B issue 2:</b> Need to amend element in specific areas	N	Separate strategy being developed to evaluate herd size using a 5 year monitoring strategy.
Psnw: Protect WH&B where they were identified as existing in 1971			
Pssgm: Exclude WH&B form naturally occurring surface waters but maintain access to Big Horn.	<b>WH&amp;B issue 3:</b> Adjust exclusion areas to protect riparian resources.	N	Can Occur as needed under existing management
AC: Develop joint mgt plans for WH&B populations in areas that cross-jurisdicct boundaries.	<b>WH&amp;B issue 4:</b> Coordination strategies	N	Being pursued in a separate strategy
<b>7. Range Management and Livestock Grazing Element</b>			
AC52: Any MUC Boundary changes needed?			
Pssh, Psgb: Revise boundaries of Lacey-Cactus- McCloud & Eureka Valley allotments so they do not include portions of DVNP. Reexamine grazing levels as appropriate.	<b>Range issue 1:</b> Need for Mgt zoning adjustments	Y	Boundary / herd size changes proposed as a result of the CDPA
Pstrh: Livestock should be allowed to graze inside the drift fence on hunter MT.			
AC5: Need to adjust grazing preferences due to changes in resource mgt goals in DT Wildlife Management areas.	<b>Range issue 2:</b> Need to amend element in specific areas to meet DT recovery goals.	Y	Alternatives considered for DT conservation strategy
Pssgm: Exclude livestock from naturally occurring surface water but retain access for bighorn.	<b>Range issue 3:</b> Adjust exclusion areas to protect riparian resources.	N	May occur under existing management
? : Provide guidance for improvements in wilderness (refer to CDPA as approp)	<b>Range issue 4:</b> Guidance/need for improvement in wilderness	N	Outside the scope of this planning effort. Addressed in general BLM policies, the CDPA and separate planning annexes.
? : Avoid duplication of services between communities and Federal lands.			Addressed for DT conservation and where single allotments have been split. Other issues are outside the scope of this planning effort. Can be addressed through existing management and/or subsequent activity level planning
? : Joint Management of any facilities with NPS			
NePS: Consider establishing carrying capacities and a planning area wide permitting system for heavily used areas.	<b>Range issue 5:</b> Coordination strategies	Y	
G: How can we coordinate signage, structures and services to meet visual goals, provide positive image of agencies.			



8. Recreation Element					
AC52: Any MUC boundary changes needed?	Recreation issue 1: Need for mgt. Zoning adjustments	N	Outside the scope of this planning effort. Not DT conservation or CDPA focused. CDPA plan adequate in this area.		
?: What if any, additional visitor service / facility should be provided and where – Federal Lands , communities?	Recreation issue 2: Need for additional facilities.	N	Outside the scope of this plan		
Psa: No additional facilities					
AC27: Identify measures to deal with disability access					
AC5: Do we need to identify and develop additional water sources (e.g. at trailheads)					
AC4a, AC7: Develop a strategy for non-motorized recreation in particular Mtn. Biking and horse trails.	Recreation issue 3: Need for additional non-motorized recreation strategy	N	Outside the scope of this planning effort		
NePS: Address adequacy of trailhead parking, especially for wilderness areas, maintenance of, number and length of trails and need for single or multi-use trails bicycles, hikers and equestrians.					
NePS: Address various recreational opportunities including hang gliding, trail bicycles, and rock bounding.					
F: Where can we anticipate increased use and how can we work with private sector to provide touring, filming- commercial and recreational.					
AC1: Do we need to develop a strategy to bring commercial tour activities under permit?	Recreational issue 4: Need for additional recreation management. strategies	N	Outside the scope of this planning effort. They are not DT conservation or CDPA driven. Existing strategies are adequate. Shooting may be addressed in the context of the DT Conservation Strategy.		
AC2-AC6: What can we do to prevent decorative rock collection. Will restricted access in wilderness put additional pressure on existing collecting areas?					
AC6: Do we need to permit uses that are higher risk, such as rock climbing?					
NePS: Address the issue of recreational shooting/ plinking in the preserve. (Also a BLM issue)					
AC20, NePS: Should we develop a policy on firewood and campfires on public lands based on sensitive resources and/or fire management policies.	Recreational Issue 5: Need for additional camping guidance	Y	Addressed in DT conservation only. Other issues are outside the scope of this planning process.		
NePS: Look at policies on roadside camping, particularly in wilderness.					
Pema: Consider adding no additional camping restrictions.	Recreational issue 6: Need for alternative for specific recreational opportunities.	N	Outside the scope of this planning process. Wilderness designation was anticipated and considered in CDCA plan and a part of broader consideration of recreational opportunities.		
NePS: I.D. alternative areas for recreational opportunities no longer permitted in wilderness	Recreational issue 7: Coordination strategies	N	Outside the scope of this planning effort.		
?: How can travel corridors through gateway communities complement the goals and missions of adjacent Federal land while gaining economic benefit to the communities? Joint Marketing strategies?					
9. Motor Vehicle Access Element					
AC52: Any MUC boundary changes needed?	Access issue 1: Need for management zoning adjustments	N	Effects of any proposed changes on MVA will be evaluated		
AC4,AC6: Provide access to private lands, grazing allotments valid mineral claims, particularly in wilderness.	Access issue 2: Need for access for private lands and permitted uses.	Y	Where route designation is occurring, this issue is addressed (i.e. proposed DT Wildlife Management Areas)		
NePS: Address access for VER, permitted uses and maintenance of facilities and private lands as well as general public access.					
PSkr: Discuss RS2477 grandfathered rights (re: maintained highways established before FLPMA)	Access issue 3: Consideration of RS2477	N	Outside the scope of this planning effort. BLM policy on RS2477 is addressed a national level.		



Chapter 5 - 22



10. Geological, Energy & Mineral Resources Element				
AC52: Any MUC boundary changes needed	GEO Issue 1: Need for management zoning adjustments	Y	MUC amendment alternatives proposed.	
Psbl/cp: Revise MUC of Panamint Range from DVNP or adj. BLM wilderness east of the center of the Playa to M (From L)				
PSbl/cp: Revise MUC of former WSA in the Slate Range from L to M				
AC1: Need for additional segregations given CDPA mineral access limitations				
Pskr,Psbv,Psrh,Psroc: Keep remaining areas available for mining.				
SBmtg: How should we address small mines VS large mines, Small disturbance Vs more jobs	Geo Issue 2: Need for additional mining restrictions / opportunities	Y	Considering issue in the context of DT Conservation Strategy development	
NePS: Address the impacts from abandoned mines in & near the planning area boundaries, reclaim and reveg plans and adequacy of existing mitigation measures.	Geo Issue 3: Need for additional reclamation guidance	N	Outside the scope of this planning effort.	
11. Energy Production and Utility Corridors Element				
AC52: Any MUC Boundary changes needed?	Utility issue 1: Need for mgt zoning adjustments	Y	Changes proposed to the extent existing corridors were affected by the CDPA.	
AC31: Designate locations for low power radio transmitters along I-15/40 to provide traveler information.	Utility Issue 2: Need to develop additional com site locations	N	Outside the scope of this planning effort	
?: Should additional radio sites I-15/40 provide traveler with info on things to do and see in the desert? Who would provide Info?				
12. Land Tenure Adjustment Element				
AC52: Any MUC boundary changes needed?	LTA issue 1: Need for management zoning adjustments	Y	MUC change amendments proposals	
MUC Changes from L to M in Tecopa area to facilitate exchange out of Federal ownership for isolated tracts.				
MUC change from L to M to facilitate sale of land to Watkins	LTA issue 2: Need to accommodate future growth	Y	Addressed in context of the DT strategy or where specific proposals were identified during scoping	
BCSD: Consider making more land available for development				
AC3: Do we need to look at mod to LTA to facilitate consolidation, exchanges with Cattellus or local needs	LTA Issue 3: Need for LTA boundary consolidation zone modifications	Y	Addressed in DT Wildlife Management areas only. Timbisha issue is addressed in a separate planning process	
AC61: Incorporate decisions made on Timbisha Tribal lands.				
NePS: Examine possible land exchanges to consolidate Federal lands and recommend boundary adjustments.				
?: Need for additional boundary identification (Public, private, agency)	LTA Issue 4: Need for clarification of boundaries	N	BLM- Outside the scope of this planning effort. NPS- is anticipated to address in NEMO planning process.	
PSjh: DVNP boundary should follow the Saline Valley road through the east side of Lee Flat and down San Lucas Canyon, as the boundary is not definite and the road boundary would be.				
Psja: Adjust the above boundary to the ridge line or the road and make other boundary adjustments to exclude valid mining claims.				



13A. Support Requirements: Air Quality					
AC52: Any MUC boundary changes needed	Air issue 1: Need for management zoning adjustments	Y	Addressed in Desert Tortoise critical habitat only		
AC25: Identify and designate PSD area					
NePS: Address AQ within planning area					
PSsgm: Evaluate the effects of soil disturbances, groundwater pumping and wind erosion on Air Quality.					
NePS: Discuss fuel dumping by military aircraft	Air Issue 2: Need for additional site specific management strategies.	N	Outside the scope of this planning effort. Plans already exist for non-attainment areas with Air Quality Standards.		
13B. Support Requirements: Soil Resources					
AC52: Any MUC boundary changes needed	Soil Issue 1: Need for mgt zoning adjustments	N	Outside the scope of this planning effort		
Pssgm: Focus on soils as a high priority mgt area-I.D. and protect fragile soils and monitor soil impacts and soil component health	Soil issue 2: Need for additional site specific soil management and protection strategies	Y	Addressing in the DT Wildlife Management Areas only		
AC115: Additional resources data is weak or not existing. Need to develop this data	Soil issue 3: Need for additional reclamation strategies	Y	Addressed in the context of the DT Conservation strategy only		
AC22, AC10: Need standards for successful reclamation of various disturbances. Whose standards- Should we use SMARA standards?					
Pssgm: Restore soils and vegetation at abandoned developments (mines, corrals, homesteads) and other denuded areas.					
13C. Support Requirements: Water Resources					
AC52: Any MUC boundary changes needed	Water Issue 1: Need for Mgt Zoning adjustments	N	Outside the scope of this plan		
AC126,AC4Look at need for additional water strategies for water quality, a critical aspect of desert ecosystem management.	Water Issue 2: Need for additional general strategies to protect water quality	N	Outside the scope of this plan		
NePS: Consider regional development and Fed project effects on water quality					
NePS: Restore springs to make them suitable for wildlife					
Pssgm: Stop additional spring modification					
Psbv: I.D. any/all lands protected under wetlands regulations (mining prospective)					
Pssgm: Manage wetlands to protect water quality					
AC33: Develop long-term strategy to protect the Amargosa Watershed	Water issue 3: Need for additional site-specific strategies to protect water quality	Y	Addressed in the ACEC proposal for Amargosa		
Pssh: Address affects of water pumping(e.g. mining) on water in Amargosa R. and work to limit pumping to an amount that will not compromise water flow (in DVNP)					



AC126, AC4, PSkr: Look at need for additional strategies with regard to water rights, adjudication, and water quality, other critical aspects of the desert ecosystem management.	Y	Water Issue 4: Need for additional strategies to assure adequate water quantities for natural resources	Addressed for T&E species only. Otherwise outside the scope of this planning effort.
NePS: Consider regional development and fed project effects on water quality			
AC8: Do we need strategies to protect sensitive habitat from ground water withdrawal.			
AC62: Evaluate impacts of and plan appropriate strategies to deal with Impacts of water use on natural resources			
AC3: Evaluate impacts of ground water depletion on habitat health. What is the threshold of drawdown and what can be done to conserve water-dependent habitats?			
Pssgm: Increase monitoring to determine ground water pumping effects.			
Psrlh: Protect my water rights on Hunter Mountain.			
13D. Support Requirements: Research / Monitoring			
AC36: Should we develop a comprehensive research strategy thatspeaks to on the ground issues .	Y	Research issue 1: Need for research strategy plan in area	Addressed in DT Wildlife Management areas and other ACEC proposals.
Pssgm: Develop an ecosystems based fire management policy			
Pssgm: Recommend a system for approving, supervising, & coordinating research activities in the planning area			
Pssh: Coordinate research activities so that \$\$ are used effectively			
Develop cost benefit analysis for proposals	Y	Research issue 2: Need for Cost/benefit analysis	This is addressed in the DT Conservation Strategy and for all proposals in the context of the EIS
Key for Source Abbreviations: AC - Agency scoping comment (NPS or BLM) PSxx- Public scoping comment with initials of person providing input.* *if no initials given, the source could not be identified NePS- NEMO planning team scoping comments ?- unknown source			



# This Page Intentionally Left Blank



## 6.0 DOCUMENT SUPPORT

### 6.1 LIST OF PREPARERS

#### CONTRIBUTORS TO THE DOCUMENT

Ray Bransfield	Biologist	U.S. Fish & Wildlife Service
Carol Crosby	Biologist	U.S. Fish & Wildlife Service
Dr. Hal Avery	Biologist	U.S. Geological Survey
Dr. Bill Boarman	Biologist	U.S. Geological Survey
Frank Hoover	Biologist	CA. Department of Fish & Game
Becky Jones	Biologist	CA. Department of Fish & Game
Jim Scrivner	Geographic Information Systems	BLM - CA. State Office
Fran Evanisko	Geographic Information Systems	BLM - CA. State Office
Dick Crowe	Project Manager - NECO	BLM - CA. Desert District
Wes Chambers	Resource Management Specialist	BLM - CA. Desert District
Tom Zmudka	Geographic Information Systems	BLM - CA. Desert District
Dave Sjaasted	Wild Horse & Burro Program Lead	BLM - Ridgecrest Field Office
Alex Neibergs	Wild Horse & Burro Specialist	BLM - Ridgecrest Field Office
Joyce Schlachter	Biologist	BLM - Ridgecrest Field Office
Kim Allison	Rangeland Management Specialist	BLM - Ridgecrest Field Office
Barbara Deverse	Geographic Information Systems	BLM - Ridgecrest Field Office
Glenn Harris	Rangeland Ecologist & Botanist	BLM - Ridgecrest Field Office
Randy Porter	Geologist	BLM - Ridgecrest Field Office
Judyth Reed	Archaeologist	BLM - Ridgecrest Field Office
Mike McGill	Biologist	BLM - Needles Field Office
Lesly Smith	Outdoor Recreation Planner	BLM - Needles Field Office
Bernice McProud	Rangeland Management Specialist	BLM - Needles Field Office
John Murray	Archaeologist	BLM - Needles Field Office
Ken Downing	Geologist	BLM - Needles Field Office
Tom Egan	Biologist/Botanical Lead	BLM - Barstow Field Office
Tanya Egan	Natural Resource Specialist	BLM - Barstow Field Office
Bruce West	Natural Resource Specialist	BLM - Barstow Field Office
Jessie Walker	Botanist	BLM - Barstow Field Office
Larry Monroe	Geologist	BLM - Barstow Field Office
Ken Schulte	Geologist	BLM - Barstow Field Office
Shelly Jackson	Geographical Information Systems	BLM - Barstow Field Office
Cheryl Hickman	Geographical Information Systems	BLM - Barstow Field Office
Gina Robison	Park Ranger/EMT	BLM - Barstow Field Office
Dave Frink	Outdoor Recreation Planner/ Wilderness Coordinator	BLM - Barstow Field Office
Sarah Cunkelman	Archaeologist	BLM - Barstow Field Office
Mike Dekeyrel	Lands Section Chief	BLM - Barstow Field Office
Anthony Chavez	Rangeland Management Specialist	BLM - Barstow Field Office
Stephen Schmidt	Geographical Information Systems	BLM - Barstow Field Office
Carl Rountree	NEMO Management Team	BLM - CA. State Office
Jack Mills	NEMO Management Team	BLM - CA. State Office
Tim Salt	NEMO Management Team	BLM - CA. Desert District
Larry Foreman	NEMO Management Team	BLM - CA. Desert District
Larry Morgan	NEMO Management Team	BLM - CA. Desert District
Douglas Romoli	NEMO Management Team	BLM - CA. Desert District
Molly Brady	NEMO Management Team	BLM - Needles Field Office
Gary Sharpe	NEMO Management Team	BLM - Needles Field Office
Tim Read	NEMO Management Team	BLM - Barstow Field Office



Mark DePoy	NEMO Management Team
Hector Villalobos	NEMO Management Team
Ahmed Mohsen	NEMO Management Team
Greg Thomsen	NEMO Management Team
Larry Blaine	NEMO Writer-Editor
Edythe Sechafer	NEMO Project Manager

BLM - Barstow Field Office
BLM - Ridgecrest Field Office
BLM - Ridgecrest Field Office
BLM - Ridgecrest Field Office
NEMO Planning Team
NEMO Planning Team

## 6.2 LITERATURE SITED

40 Code of Federal Regulations 1500

40 CFR 1502-21

42 United States Code 4321, National Environmental Policy Act, 1969

42 United States Code 7401 et. al.

43 CFR 1610.5-5

43 CFR subpart 80

43 CFR 3802

43 CFR 3809

43 CFR 4180-2

43 CFR 8340 et. seq.

43 CFR 8560.4-6

**Anderson D.R., and K.P. Burnham.** Updated. A monitoring program for desert tortoise. Rept. Of Colo. COOP. Fish and wildlife Res. Unit, Fort Collins, Colorado.

**Avery, H.W. 1998,** Nutritional ecology of the desert tortoise (*Gopherus agassizii*) in relation to cattle grazing in the Mojave Desert. PHD dissertation, University of California, Los Angeles.

**Belnap, J. and J.S. Gardner.** 1993, Soil microstructure of the Colorado Plateau: the role of the cyanobacterium *Microcoleus vaginatus*. Great Basin Naturalist 53:40-47

**Bleich,** Pers Comm, 1998

**Bloom, P.H.** 1980. The status of the Swainson's Hawk in California, 1979. Wildlife Mgmt. Branch, Nongame Wildl. Invest, Job II-8.0. Calif. Dept. Fish and Game, Sacramento, California.

**Boarman, W.I. and M. Sazaki.** 1996. Highway mortality in desert tortoise and small vertebrates: success of barrier fences and culverts. Pages 169-173 in Transportation and wildlife mortality and improving wildlife passageways across transportation corridors. G. Evink, D. Zeigler, P. Garrett and J. Berry, editors. U.S. Department of Transportation, Federal Highway Administration, Washington D.C.



**Brooks M.** 1997 Alien Annual Grass Distribution, Abundance and Impact on Desert Tortoise Habitat in the Western Mojave Desert. Pages 1-20 in Bureau of Land Management Annual Report 1997. Interagency Agreement No. R220A50012

**Busack S.D., and R.B. Bury.** 1974. Some effect of off-road vehicles and sheep grazing on lizard populations in the Mojave Desert. Biological Conservation 6: 179-183

**California Department of Fish and Game.** 1988. Five-year status report: Swainson's Hawk. California Department of Fish and Game, Wildlife Management Division, Nongame Bird and Mammal Section, Sacramento, California.

**California Desert Protection Act,** 31 Oct, 1994

**California Desert Protection Act,** Sec [c], 31 Oct, 1994

**Cameron, R.E.** 1966. Desert Algae: soil crusts and diaphanous substrata as algal habitats. Jet Propulsion Lab Technical Report 32-971: 1-41

**Craig, D. and Williams, P.** 1998. Draft Riparian Bird Conservation Plan: A Strategy for Reversing the Decline of Birds and Associated Riparian Species in California. U.S. Forest Service.

**Dahl, T.E.** 1990. Wetlands losses in the United States, 1780s to 1980s. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. 13 pp.

**Dean Runyan Associates** 24 June 1998 - Northern and Eastern Mojave Planning Area: Economic Impact Analysis; Prepared for the National Park Service

**Eldridge, D.J., R.S.B. Greene.** 1994. Microbiotic soil crusts: a review of thier roles in soil and ecological processes in the rangelands of Australia. Australian Journal of Soil Research 32: 389-415

**England, Sidney.** 1998. Bureau of Land Management. West Mojave Bioregional Plan, unpublished data base

**Esque, T.C.** 1994. Diet and diet selection of the desert tortoise (*Gopherus agassizii*) in the northeast Mojave Desert. M.Sc. Thesis, Colorado State University, Ft. Collins, CO.

**Federal Register Vol. 49,** No. 222, 1984, **Vol. 50,** No. 97, 1985, **Vol. 60,** No. 35, Page(s) 9956, 22 Feb. 1995

**Frankham, R.** 1995. Inbreeding and extinction: a threshold effect. Conserv. Biol. 9: 792-799



- Friedmann, E.I., and M. Galum. 1974.** Desert Algae, lichens and fungi. *In*: Brown B.W., ed. Desert Biology. Academic Press, New York, Pages 165-212
- Friedmann, E.I., and R Ocampo-Paus. 1976.** Endolithic blue-green algae in the Dry Valley: primary producers in the Antarctic Desert Ecosystem. *Science* 193: 1247-1249
- General Accounting Office. 1992.** Rangeland Management: BLM's hot desert grazing program merits reconsideration. U.S. General Accounting Office. GAO/RCED-92-12
- General Accounting Office. 1988.** Public rangelands: Some riparian areas restored but widespread improvement will be slow. General Accounting Office, U.S. Government. Washington D.C.
- Grinnell, J. and A.H. Miller. 1944.** The distribution of the birds of California. Pacific Coast Avifauna No. 27.
- Halterman, M. D. 1991.** Distribution and habitat use of the Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*) on the Sacramento River, California. 1987-1990. M.S. Thesis, California State University, Chico, California.
- Hobbs, R.J. 1989.** The nature and effects of disturbance relative to invasions. Pp. 389-405 *In* J.A. Drake et. al. (eds). Biological Invasions: a global perspective. John Wiley and Sons Ltd., New York
- Homer B.L., K.H. Berry, M.M. Christopher, M.B. Brown, E.R. Jacobson. 1994.** Necropsies of desert tortoises from the Mojave and Colorado Deserts of California and the Sonoran Desert of Arizona. University of Florida, Gainesville.
- Homer, B.L., K.H. Berry, and E.R. Jacobson. 1996.** Necropsies of eighteen desert tortoises from the Mojave and Colorado deserts of California. Final Report to the United States Department of the Interior, National Biological Service, Research Work Order No. 131, Riverside, California, 120pp.
- Jacobson, E.R., J.M. Gaskin, M.B. Brown, R.K. Harris, C.H. Gardiner, J.L. LaPointe, H.P. Adams, and C. Reggiardo. 1991.** Chronic upper respiratory tract disease of free-ranging desert tortoises (*Xerobates agassizii*). *Journal of Wildlife Diseases* 27(2):296-316.
- Johnson, R. R., and L. T. Haight. 1984.** Riparian problems and initiatives in the American Southwest: a regional perspective. Pp. 404-412 in California riparian systems: ecology, conservation and productive management (R.E. Warner and K.M. Hendrix, eds.). University of California Press, Berkley. 1035 pp.
- Johnson, R.R., L. T. Haight, and J. M. Simpson. 1987.** Endangered habitats versus endangered species: a management challenge. *Western Birds* 18:89-96.



**Katibah, E. F.** 1984. A brief history of riparian forests in the Central Valley of California. Pp. 23-29 in California riparian systems: ecology, conservation, and productive management (R.E. Warner and K.M. Hendrix eds.). University of California Press, Berkeley. 1034 pp.

**LaBerteaux, D.L.** 1994. Management plan recommendations for the Inyo California towhee (*Pipilo crissalis eremophilus*) on Naval Air Weapons Station, China Lake, California. Naval Air Weapons Station contract N60530-90-0071 (0018), Commanding Officer (C08081), China Lake, California.

**LaBerteaux, D. L., and Bruce H. Garlinger.** 1998. Inyo California towhee (*Pipilo crissalis eremophilus*) census in the Argus and Coso Mountain Ranges, Inyo County, California. Prepared for Commanding Officer (83E000D), Naval Air Weapons Station, China Lake, CA. Contract N62474-98-M-3113. 92pp.

**Laymon, S. A.** 1998. Bureau of Land Management. West Mojave Bioregional Plan, unpublished data base.

**Laymon, S. A. and M. D. Halterman.** 1989. A proposed habitat management plan for Yellow-billed Cuckoos in California. USDA Forest Service Gen. Tech. Rep. PSW-110 p 272-277.

**Laymon, S. A. and M. D. Halterman.** 1985. Yellow-billed Cuckoos in the Kern River Valley: 1985 population, habitat use, and management recommendations. California Department of Fish and Game, Nongame Bird and Mammal Section Rept. 85.06.

**Laymon S. A., P. L. Williams, and M. D. Halterman.** 1997. Breeding status of the Yellow-billed Cuckoo in the South Fork Kern River Valley, Kern County, California: summary report 1985-1996. Admin. Rept. USDA Forest Service, Cannel Meadow Ranger District, Sequoia National Forest.

**Lovich, J. E. and D. Bainbridge.** 1999. Anthropogenic degradation of the Southern California desert ecosystem and prospects for natural recovery and restoration. Environmental Management Vol. 24, No. 3, pp. 309-326.

**Marcus, Susan.** BLM, 1985, Lands Valuable for sodium & potassium, map 1:500,000; BLM, 1978, map 1:500,000 "Lands Valuable for Geothermal Resources"; 1980, Pyramid Peak G-E-M Resource Area draft report,

**Nagy, K. A., B. T. Henen, and D. B. Vyas.** 1998. Nutritional quality of native and introduced food plants of wild desert tortoises. J. Herpet. 32:260-267.



**National Park Service Technical Report.** Contract NRTR-97/12. 1997. USGS Biological Resources Division, Colorado Plateau Research Station, Northern Arizona University: A Southwestern Willow Flycatcher Natural History Summary and Survey Protocol. 39 pp.

**National Park Service, Northern and Eastern Mojave Planning Team.** Contract 1443CX2000-95-006, Task Order #18. 24 June 1998. Dean Runyan and Associates: Northern and Eastern Mojave Planning Area: Economic Impact Analysis. 45 pp.

**Opdam, P.** 1988. Populations in fragmented habitat. *in*: Connectivity in landscape ecology,. Pp 75-78. (K. F. Schreiber, ed.). Proc. 2nd Internat. Seminar of the Internat. Assoc. for Landsc. Ecol., Munster, Germany, 1987. Munstersche Geographische Arbeiten 29.

**Phillips, A.R., J. Marshall, and G. Monson.** 1964. The birds of Arizona. University of Arizona Press, Tucson, Arizona. 212 pp.

**Sawyer, J.O. and T. Keeler-Wolf.** 1995. A Manual of California Vegetation. California Native Plant Society, Sacramento, CA.

**Sharp, C.S.** 1902. Nesting of Swainson's Hawk. Condor 4:116-118

**State of Arizona.** 1990. Final report and recommendations of the Governor's riparian habitat task force. Executive Order 89-16. Streams and riparian resources. Phoenix, Arizona. October 1990. 28 pp.

**Tracy, C.R.** Updated. Workshop on estimating size of desert tortoise populations (WESDTP). Rept. On workshop held in 1996.

**Turner, F.B., and K.H. Berry.** 1984. Methods used in analyzing desert tortoise populations. IN **Berry K.H.** 1984, The status of the desert tortoise (*Gopherus agassizii*) in the United States. Contract rept No. 11310-008-0083-81 to USFWS.

**Unitt, P.** 1987. *Empidonax traillii extimus*: an endangered subspecies. Western Birds 18(3):137-162.

**U.S. Department of Interior,** Bureau of Land Management Manual TR 1739-9, 1993

**U.S. Department of Interior,** Bureau of Land Management Recreation Program

**U.S.D.I., BLM,** California Desert Conservation Area Plan, 1980 (Page 13, 61, Chapter 7)

**U.S.D.I., BLM,** California Desert Conservation Area Plan, Appendix IX, X

**U.S.D.I., BLM,** California Desert Conservation Area Plan, Amendment #19, 53



**U.S.D.I., BLM, Las Vegas Resource Management Plan, 1998**

**U.S. Fish and Wildlife Service, The Amargosa Vole Recovery Plan, 15 Sep 1997**

**U.S. Fish and Wildlife Service, The Desert Tortoise Recovery Plan (Mojave Population) June 1994**

**U.S. Fish and Wildlife Service. 1998. Recovery Plan for the Inyo California Towhee.**

**U.S. Fish and Wildlife Service, Portland, Oregon. 32pp.**

**U.S. Fish and Wildlife Service. 1993. Proposal to list the southwestern willow flycatcher as an endangered species and to designate critical habitat. July 23, 1993, Federal Register 58:39495-39522.**

**U.S. Fish and Wildlife Service. 1995. Final Rule Determining Endangered Status for the Southwestern Willow Flycatcher. Federal Register 60:10694 (February 27, 1995).**

## **6.3 GLOSSARY**

**Accelerated Erosion:** Soil loss above natural levels resulting directly from human activities.

**Acre-Foot:** The volume of water that will cover an acre of land to a depth of one-foot (323,851 gallons or 43,560 cubic feet).

**Activity Plan:** A detailed specific plan for management of a single resource program or plan undertaken as necessary to implement the more general resource management plan decisions.

**Act, The:** The Wild Free-Roaming Horse and Burro Act of December 15, 1971, 16 U.S.C. 1331-1341

**Adverse Effect (Cultural Resources):** Alteration of the characteristics which contribute to the use(s) determined appropriate for a cultural resource or which qualify a cultural property for the National Register to such a degree that the appropriate use(s) are diminished or precluded or the cultural property is disqualified from National Register eligibility. Criteria in the regulations of the Advisory Council (36 CFR, Part 800) guide the determination of adverse effects.

**Age Class:** An age interval, usually with a 10 to 20 year span, into which a vegetative area is classified (e.g. a 80-100 year old stand of bitterbrush).



**Age Structure :** The percentage make-up of a herd in terms of age groups 0-1, 1-2, 2-5, 5-10, 10-15, 15-00 used in determining or understanding the population dynamics and identifying future or past problems in the herd.

**Air Pollution:** Accumulation of aerial wastes beyond the concentrations that the atmosphere can absorb and which may, in turn, damage the environment.

**Air Quality Classes:** Classes established by the Environmental Protection Agency (EPA) that define the amount of air pollution considered significant within an area:

- I. Almost any change in air quality would be considered significant
- II. Deterioration normally accompanying moderate, well-controlled growth would be considered insignificant.
- III. Deterioration up to the National Standards would be considered insignificant.

**Allotment:** An area of land designated and managed for the grazing of livestock by one or more livestock operators. It generally consists of public lands, but may include parcels of private, other Federal or State owned lands.

**Allotment Categorization:** As an aid to prioritize grazing allotments for development of management plans, BLM has placed all allotments into one of three categories: improve (I), maintain (M), or custodial (C).

**Allotment Management Plan:** A documented program which applies to livestock operations on the public lands, which is prepared in consultation with the permittee(s) or lessees involved, and which prescribes the manner in which livestock operations will be conducted in order to meet the multiple-use, sustained yield, economic, and other needs and objectives as determined for the public lands through land use planning.

**Alluvial Fan:** A fan-shaped accumulation of disintegrated soil material; water deposited and located in a position where the water departs from a steep coarse to enter upon a flat plain or an open valley bottom.

**Alluvium:** Material, including clay, silt, sand, gravel, or similar unconsolidated sediments, deposited by a streambed or other body of running water.

**Ambient Air Quality:** Prevailing condition of the atmosphere at a given time; the outside air.

**Animal Unit (AU):** A measurement of animal numbers based on the equivalent of a mature cow with calf (1000 pounds live weight); roughly one cow with calf, one horse, five sheep, or five deer. One burro equals  $7/10^{\text{th}}$  of an animal unit.



**Animal Unit Month (AUM):** The amount of food or forage required by an animal unit (one cow or five sheep) for one (1) Month.

**Annual Plant Species:** A plant that completes its life cycle and dies in one year or less.

**Apparent Trend:** An interpretation of the direction of change in vegetation and soil protection over time, based on a single observation. Apparent Trend is described in the same terms as measured trend except that when no trend is apparent, it shall be described as none.

**Appropriate Management Level (AML):** A single number which is the highpoint of an established population range to maintain a thriving natural ecological balance, based on available forage, water, and other resource needs or conflicts.

**Aquifer:** A water bearing unit of permeable rock or sediment that is capable of yielding water to wells.

**Archaic Period:** Archeological period beginning about 8,000 BC to about 800AD.

**Archeological District:** An area that provides a concentration of cultural properties in a discrete, definable location.

**Area of Critical Environmental Concern:** Areas within the public lands where special management attention is needed to protect and prevent irreparable to important historical, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards.

**Aridisols:** An order of soils at apparent dynamic equilibrium with the climate of dry regions. They show limited profile development because of a low climatic intensity, the horizon containing less than 1- percent organic matter.

**Aspect Species:** A vegetation species that appears to be dominant in the landscape, although it may be only a small percent of the total vegetation composition.

**AUM (Animal Unit Month):** The amount of forage necessary to support a cow and her calf for one month. An AUM will also support five sheep or goats, a bull, and a horse for one month.

**Biomass:** The total quantity of living organisms of one or more species per unit of living space (called species Biomass) or of all the species in a community (called community Biomass).

**Browse:** (Noun) That part of leaf and twig growth of shrubs, woody vines, and trees available for animal consumption. (Verb) To consume - browse.



**Browsers:** Animals that feed primarily on browse.

**Caliche:** A layer of soil more or less cemented by Calcium Carbonates ( $\text{CaCO}_3$ ), commonly found in arid and semiarid regions.

**Campsite:** A cultural site type representative of all periods consisting of temporary habitation areas which usually contain a lithic scatter, evidence of fire use, ground stone, and pottery scatter.

**Candidate Species:** Any species of animal or plant listed for consideration to be listed as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) under the Endangered Species Act. Definitions for Categories 1 and 2 candidate species, excerpted from the Federal Register, are as follows:

**Category 1:** Taxa for which the USFWS currently has on file substantial information on biological vulnerability and threat(s) to support the appropriateness to list them as endangered or threatened species. Presently, data are being gathered concerning precise habitat needs, and for some of the taxa, concerning the precise boundaries for critical habitat designations. Development and publication of proposed rules on these taxa are anticipated, but, because of the large number of such taxa, could take some years. Also included in Category 1 are taxa whose status in the recent past is known, but that may have already become extinct.

**Category 2:** Taxa for which information now in possession of the USFWS indicates that proposing to list them as threatened or endangered species is possibly appropriate, but for which substantial data on biological vulnerability and threat(s) are not currently known or on file to support the immediate preparation of rules. Further biological research and field study usually will be necessary to ascertain the status of the taxa in Category 2, and some of the taxa are of uncertain taxonomic validity. It is likely that some of the taxa will not warrant listing, while others will be found to be in greater danger of extinction than some taxa in Category 1.

**Canopy Cover:** The cover of leaves and branches formed by the tops or crowns of plants as viewed from above the cover.

**Carrying Capacity:** Maximum stocking rate possible without inducing damage to vegetation or related resources. It may vary from year to year on the same area due to fluctuating weather conditions and forage production. (See grazing capacity)

**Catastrophic Event:** A large scale, high intensity natural disturbance that occurs infrequently (e.g. flood, fire).

**Cave:** Any naturally occurring void, cavity, recess, or system of interconnected passages which occurs beneath the surface of the earth or within a cliff or ledge (including any cave resource therein, but not including any vug, mine, tunnel, aqueduct, or other man-



made excavation) and which is large enough to permit an individual to enter, whether or not the entrance is naturally formed or man-made. Such term shall include any natural pit, sinkhole, or other feature that is an extension of the entrance.

**Clay:** A mineral soil separate consisting of particles less than 0.002 millimeters in equivalent diameter.

**Climax Vegetation Community:** The final or stable community in a series of successive vegetation states which is self-perpetuating and in dynamic balance with the physical and biotic environment.

**Community:** A group of plants and animals living together in a common area and having close interactions.

**Concentration Area (Critical Area):** That portion of the herd management area where the forage impacts are most extreme.

**Contrast (Visual):** The effect of a striking difference in the form, color, line, or texture of an area being viewed.

**Contrast Rating:** A method of determining the extent of visual impact of an existing of proposed activity that will modify any landscape feature.

**Coordinated Resource Management Plan:** A plan for management of one or more allotments that involves all the affected resources, e.g. range, wildlife, and watershed.

**Cover:** Small rocks, litter, basal areas of grass and forbs, and aerial coverage of shrubs that provide protection to the soils surface (i.e. in contrast to bare ground)

**Critical Period:** The time period the entire herd is within the critical area, usually during the hot or dry seasons.

**Critical Soils:** Soils that (1) contain very highly saline soils and/or (2) are very susceptible to water erosion

**Critical Watershed:** An area of soils that (1) have a high potential for salt yield; (2) are subject to severe water and wind erosion when disturbed; (3) have high runoff potential during storm events; (4) are subject to frequent flooding; or (5) have a potential for loss of vegetation productivity under high rates of wind and water erosion.

**Critical Wildlife Habitat:** Is defined in the Endangered Species Act as follows: (1) The specific areas within the geographical area occupied by an animal species at the time that it is listed in accordance with the provisions of section 4 of this act on which are found those physical or biological features essential to the conservation of the species and (2) which may require special management consideration or protection; and (3) specific



areas outside the geographical location occupied by the species at the time it is listed in accordance with the provisions of section 4 of this act, upon a determination by the Secretary that such areas are essential for the conservation of the species.

**Crucial Wildlife Habitat:** Sensitive use areas that are necessary to the existence, perpetuation, or introduction of one or more species during critical periods of their life cycle.

**Cultural Property:** Any definite location of past human activity, habitation or use identified through a field inventory (see below), historical documentation or oral evidence. This term may include; (1) Archeological or historic sites, structures and places, and (2) Sites or places of traditional cultural or religious importance to a specific group, whether or not represented by physical remains. Cultural properties are managed by the system of inventory evaluation, protection, and use.

**Cultural Resources:** Those fragile and non-renewable remains of human activities, occupations, and endeavors as reflected in sites, buildings, structures, or objects, including works of art, architecture, and engineering. Cultural resources are commonly discussed as prehistoric and historic values, but each period represents a part of the full continuum of cultural values from the earliest to the most recent.

#### **Cultural Resource Inventory Classes:**

**Class I: Existing Data Inventory:** An inventory study of a defined area designed to provide a narrative overview (Cultural Resource Overview) derived from existing cultural resource information and to provide a compilation of existing cultural resource site record data on which to base the development of BLM's site record system.

**Class II: Sampling Field Inventory:** A sample-oriented field inventory designed to locate and record, from surface and exposed profile indications, all cultural resource sites within a portion of a defined area in a manner which will allow an objective estimate of the nature and distribution of cultural resources in the entire defined area. The Class II inventory is a tool utilized in management and planning activities as an accurate predictor of cultural resources in the area of consideration. The primary area of consideration for the implementation of a class II inventory is a planning unit. The secondary is a specific project in which an intensive field inventory (Class III) is not practical or necessary.

**Class III Intensive Field Inventory:** An intensive field inventory designed to locate and record, from surface and exposed profile indications, all cultural resource sites within a specified area. Normally, upon completion of such inventories in an area, no further cultural resource inventory work is needed. A Class III inventory is appropriate on small project areas, all areas to be disturbed, and primary cultural resource areas.

**Cultural Site:** A physical location of past human activities or events. Cultural resource sites are extremely variable in size and range from the location of a single cultural



resource object to a cluster of cultural resource structures with associated objects and features. Prehistoric and historic sites, which are recorded as cultural resources, have sociocultural or scientific values and meet criterion of being more than fifty years old.

**Density:** The number of organisms per unit area.

**Designated Right-of-Way corridor:** A parcel of land, either linear or Aerial, that has been identified by Secretarial Order, through the land use planning process, or by other management decision, as a preferred location for existing and future rights-of-Way grants and suitable to accommodate more than one type of right-of-way or one or more rights-of-way which are similar, identical, or compatible.

**Desired Beneficial Use:** The use of water that is deemed beneficial and desirable; guidance for making determinations is contained in the Clean Water Act (Federal), Executive Order 12088, Porter-Cologne Act (California), Clean Water Act (Nevada), and a Memorandum of Understanding between the California Water Resources Control Board, BLM, and others.

**Discretionary:** Individual choice or judgement; the power of free decision or latitude within certain legal bounds.

**Diversity:** An attribute of an area, which is an expression of both the total number and relative abundance of species, communities, or habitats. Relative abundance can be measured by numbers of individuals, cover, or various other characteristics.

**Early Seral Stage:** A plant community with a species composition which is 0-25% of the potential natural community one would expect to find on that ecological site.

**Ecological Site:** A kind of land with a specific potential natural community and physical site characteristics differing from other kinds of land in its ability to produce vegetation and to respond to management.

**Ecological Status:** The present state of vegetation and soil protection of an ecological site in relation to the potential natural community for the site. Vegetation status is the expression of the relative degree to which the kinds, proportions and amounts of plants in the community resemble that of the potential natural community. If classes are used, they should be described in ecological rather than utilitarian terms. Soil status is a measure of present vegetation and litter cover relative to the amount of cover needed on the site to prevent accelerated erosion.

**Economic Impact:** The change, positive or negative, in economic conditions (including distribution and stability of employment and income in affected local and regional economies) that directly or indirectly result from an activity, project, or program.



**Ecosystem:** A complex self-sustaining natural system, which includes living and non-living components of the environment and the circulation of matter and energy between organisms and their environment.

**Endangered Species:** An animal or plant whose prospects for survival and reproduction are in immediate jeopardy, and as further defined in the Endangered Species Act of 1973.

**Energy Flows:** Pertaining to the flow of energy through an ecosystem; usually described as an "energy pyramid." The rates of energy flow can vary on rangelands in both space and time. An example of energy flow is -- sunlight energy is captured and converted into carbohydrates by green plants (producers) through photosynthesis; deer (primary consumers) eat the plants; coyotes (secondary consumers) eat deer; and eagles (tertiary consumers) eat coyotes.

**Environmental Assessment (EA):** A concise public document for which a Federal Agency is responsible that serves to; (a) briefly provide sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement or a finding of no significant impact; (b) aid an agency's compliance with the National Environmental Policy Act (NEPA) when no Environmental Impact Statement is necessary; (c) Facilitate the preparation of a statement when one is necessary. An EA includes brief discussions of the need for the proposal of alternatives as required by Sec. 102(2) of NEPA, of the environmental impacts of the proposed action and other alternatives, and a listing of agencies and persons consulted.

**Environmental Consequence:** A temporal or spatial change in the human environment caused by an act of man. The change should be (1) perceptible, (2) measurable, and (3) relatable through a change agent to a proposed action or alternative. A consequence is something that follows an antecedent (as a cause or agent). Consequences are synonymous with impacts and effects.

**Environmental Impact Statement:** A written analysis on the impacts on the environment of a proposed project or resource management plan.

**Ephemeral forage:** Part-time or seasonal forage - forage produced by annual forage species.

**Ephemeral range:** Range that does not consistently produce forage but periodically provides annual vegetation suitable for grazing.

**Erosion:** The wearing away of land surface by wind, running water, and other geological agents.

**Evaluation (Cultural Resources):** The analysis of cultural resource inventory records, the application of professional judgement to identify characteristics that contribute to possible uses for recorded cultural resources, and the recommendation of appropriate



use(s) for each resource or group of resources. National Register eligibility criteria, 36 CFR part 60, are interpreted through or with reference to BLM evaluation criteria.

**Existing Right-of-Way Corridor:** A parcel of land, without fixed limits or boundaries, that is being used as the locations for one or more rights of way.

**Exotic Species:** A species of plant or animal that is not native to the area where it is found. Any species that is not indigenous, native, or naturalized.

**Extensive Recreation Management Areas (ERMAs):** Areas where recreation is unstructured and dispersed and where minimal recreation-related investments is required. ERMAs provide recreation visitors the freedom of choice with minimal regulatory constraint.

**Federal Land:** Land owned by the United States, without reference to how the land was acquired or which Federal Agency administers the land, including mineral and coal estates underlying private surface.

**Federal Land Policy and Management Act of 1976 (FLPMA):** Public Law 94-579, which gives the BLM legal authority to establish public land policy, to establish guidelines for administering such policy and to provide for management, protection, development and enhancement of the public land.

**Fire Management:** The integration of fire protection, prescribed burning, and fire ecology knowledge into multiple use planning, decision making, and land management activities.

**Forage:** All browse and herbaceous foods available to grazing animals.

**Forage Utilization:** An index to the extent forage is used. Utilization classes range from slight (less than 20%) to Severe (more than 80%).

**Forb:** Any herbaceous non-woody plant that is not grass or grass-like.

**Fundamentals of Rangeland Health:** As described in 43 CFR 4180; the conditions in which rangelands are in properly functioning physical condition, ecological processes are supporting healthy biotic populations and communities, water quality is meeting State standards and BLM objectives, and Special Status Species habitat is being restored or maintained.

**Grass:** Any of a family of plants with narrow leaves, jointed stems, and seed-like fruit.

**Grazing Capacity:** The maximum stocking rate for grazing animals possible without inducing damage to vegetation or related resources.



**Grazing Preference:** The total number of AUMs of livestock grazing on public lands apportioned and attached to base property owned or controlled by a permittee or lessee. Active preference combined with suspended non-use make up total grazing preference.

**Ground Water:** Water beneath the land surface, in the zone of saturation.

**Guidelines for Livestock Grazing:** Livestock grazing management tools, methods, strategies, and techniques designed to maintain or achieve healthy public lands; as defined by the Standards for Rangeland Health.

**Gully Erosion:** Removal of the soil leading to formations of relatively large channels or gullies cut into the soil by concentrations of runoff.

**Guzzler:** (general term covering guzzler, wildlife drinker, tenaja) A natural or artificially constructed structure or device to capture and hold naturally flowing water, and make it accessible to small and/or large animals. Most guzzlers involve above or below ground piping, storage tanks, and valves. Tenajas are natural depressions in rock which trap and hold water. To some tenajas, steps are sometimes added to improve access and reduce mortality from drowning.

**Habitat:** A specific set of physical and biological conditions that surround a single species, a group of species, or a community of species upon which the species or associations are dependent for their existence. In wildlife management, the major components of habitat are considered to be food, water, cover and living space.

**Habitat Management Plan: (HMP):** A written and approved plan for a specific geographical area of public land which identifies wildlife habitat and related objectives, establishes the sequence of actions for achieving objectives, and outlines procedures for evaluating accomplishments.

**Habitat Requirements:** Pertaining to the biological and physical components of the environment that are required to meet the needs of a plant or animal.

**Hazardous Waste or Material (HAZMAT):** Any substance that poses a threat to the health and safety of persons or the environment. These include any material that is toxic, ignitable, corrosive, or radioactive.

**Heavy Use:** Indicates that 60 to 80% of the year's forage production has been eaten or destroyed by grazing animals.

**Herbaceous:** Vegetation with little or no woody component; non-woody vegetation such as grasses and forbs.

**Herd Area (HA):** The geographic area identified as having been used by a wild horse or burro herd as its habitat in 1971.



**Herd Management Area (HMA):** Areas established within the herd area for the maintenance of wild horse and burro herds.

**Herd Management Area Plan (HMAP):** A written and approved plan for a specific geographical area of public land, which identifies wild horse (or Burro) herd use areas and habitat, identifies population and habitat objectives, establishes the sequence of actions for achieving objectives, and outlines procedures for evaluating accomplishments.

**Historical Cultural Resources:** Historical Cultural Resources include all mines, ranches, resorts, trails, railroads, towns, and other evidence of human use from the entrance of the Spanish to 1938.

**Indicator:** Quantitative measure of an ecosystem element which is used to describe the condition of an ecosystem; changes in indicators over relatively short periods of time are used to measure affects of management.

**Isolated Tract:** A parcel of public lands surrounded by non-federal lands.

**Karst:** A type of topography that results from dissolution and collapse of limestone, dolomite, or gypsum beds and is characterized by closed depressions or sink holes, caves, and underground drainage.

**Key Area:** A relatively small portion of land selected, based on its location, use, or grazing value, as a location for monitoring the effects of grazing use. It is assumed that key areas, if properly selected, will reflect the effects of current grazing management over all or a part of a pasture, allotment, or other grazing unit.

**Key Forage Species:** Forage species whose use serves as an indicator of the degree of use of associated species. Those species that must, because of their importance, be considered in the management program.

**Key Species:** (1) Species that, because of their importance, must be considered in a management program; or (2) forage species whose use shows the degree of use of associated species.

**Land Disposal:** A transaction that leads to the transfer of title of public lands from the Federal Government.

**Landscape (Scale):** An area of interacting ecosystems where patterns are repeated because of geology, landform, soils, climate, biota, and human influences throughout the area. Applied in terms of 100's to 1000's of acres.

**Late Seral:** A plant community with a species composition which is 51 to 75% of the potential natural community one would expect to find on that ecological site.



**Leasable Minerals:** Minerals such as coal, oil shale, oil and gas, phosphate, potash, sodium, geothermal resources, and all other minerals that may be acquired under the Mineral Leasing Act of 1920, as amended.

**Limestone:** A sedimentary rock consisting chiefly (more than 50%) of calcium carbonate, primarily in the form of calcite.

**Lithic:** A stone or rock exhibiting modification by humans. It generally applies to projectile points, scrapers and chips, rather than ground stone.

**Lithic Scatter:** A prehistoric cultural site type where flakes, cores, and stone tools are located as a result of the manufacture or use of the tools.

**Loam:** Soil material that is 7 to 27% clay, 28 to 50% silt, and less than 52% sand.

**Locatable Minerals:** A mineral subject to location under the 1872 mining laws. Examples of such minerals would be gold, silver, copper and lead as compared to oil and natural gas, which are leasable minerals.

**long-term Planning:** Twenty years and beyond, approximately the year 2012.

**Management Framework Plan (MFP):** A planning decision document that establishes for a given planning area land use allocations, coordination guidelines for multiple use, and management objectives to be achieved for each class of land use of protection. A MFP is prepared in three steps: (1) resource recommendations, (2) impact analysis and alternative development, and (3) decision making.

**Metallic Minerals:** Those minerals whose native form is metallic or whose principle products after refinement are metallic.

**Mid Seral Stage:** A plant community with a species composition which is 26 to 50% of the potential natural community one would expect to find on that ecological site.

**Mineral Entry:** The location of mining claims by an individual to protect his right to a valuable mineral.

**Mineral Withdrawals:** Closure of land to mining laws, including sales, leasing and location, subject to valid existing rights.

**Mitigation:** The lessening of a potential adverse effect by applying appropriate protection measures, the recovery of cultural resource data or other measures.

**Modern Urban:** One of the six classes of the recreation spectrum. In modern urban areas, opportunities to experience recreation in affiliation with individuals and groups are prevalent, as is the convenience of recreation sites and opportunities. Opportunities for



wildland challenges, risk taking, and testing of outdoor skills are unimportant.

Opportunities for competitive spectator sports are common, as are opportunities to use parks and open spaces highly influenced by people.

**Moderate Use:** Indicates that 40 to 60% of the current years forage production has been eaten or destroyed by grazing animals.

**Moderate Use Monitoring:** The orderly collection and analysis of data to evaluate progress in meeting resource management objectives.

**Mortality:** This is the number of deaths/100 population or age group that must be subtracted from the observed recruitment, foals/100 adults, to determine accurate population projections .

**Multiple-Use:** Management of public lands and their various resource values so that they are used in the combination best meeting the present and future needs of the American People. Relative resource values are considered not necessarily the combination of uses that will give the greatest potential economic return or the greatest unit output.

**National Ambient Air Quality Standards (NAAQS):** National standards established under the Clean Air Act by the Environmental Protection Agency (EPA), Prescribed levels of pollution in the outdoor air which may not be exceeded. There are two levels of NAAQS: primary, set at a level to protect the public health from air pollution damage, and secondary, set at a level to protect public welfare from air pollution damage.

**National Environmental Policy Act (NEPA) of 1969:** A law enacted on January 1, 1970 that established a national policy to maintain conditions under which man and nature can exist in productive harmony and fulfill the social, economic, and other requirements of present and future generations of Americans. It established the Council on Environmental Quality for coordinating environmental matters at the federal level and to serve as the advisor to the President on such matters. The law made all federal actions and proposals that could have significant impact on the environment subject to review by federal, state and local environmental authorities.

**National Historic Preservation Act (NHPA):** The primary federal law providing for the protection and preservation of cultural resources. NHPA established the National Register of Historic Places, the Advisory Council on Historic Preservation, and the State Historic Preservation Officers.

**National Register of Historic Places (NRHP):** A list of buildings, sites, districts, structures and objects significant in American history, architecture, archeology, and culture maintained by the Secretary of the Interior. Expanded as authorized by Section 2(b) of the Historic Sites Act of 1935 (16 U.S.C. 462) and Section 101(a) (1) (A) of the National Historic Preservation Act.



**Native (indigenous) Species:** A species of plant or animal that naturally occurs in an area and that was not introduced by humans.

**Natural Area:** Land managed for (1) retention of its typical or unusual plant or animal types, association or other biotic phenomena; or (2) its outstanding scenic, geologic, soil or aquatic features or processes.

**Nonpoint Pollution:** Pollution from scattered sources, as opposed to pollution from one location, e.g. a manufacturing plant.

**Nonuse:** Current authorized grazing use (in AUMs) that is not used in a given time period. Nonuse is applied for and authorized on an annual basis.

**Nutrient Cycle:** Circulation of chemical elements, such as carbon or nitrogen, in specific pathways from the non-living (abiotic) parts of the environment into the organic substances (plants and animals), and then back again into abiotic forms.

**Obligate:** Restricted to a particular set of environmental conditions (opposed to facultative).

**Objective:** A measurable description of a desired future condition that specifies what is to be accomplished, location, and timeframe.

**Off-Highway Vehicle (OHV):** Any motorized vehicle designed for cross-country travel over any type of natural terrain.

**Off-Highway Vehicle Designations:** BLM designations used in this document are as follows;

**OPEN AREAS:** Designated areas and trails where OHVs may operate without restrictions

**LIMITED AREAS:** Designated areas and trails where the use of OHVs is subject to restrictions such as limits on the number or types of vehicles allowed or the dates and times of use, limit of use to existing roads and trails, or limit of use to designated roads and trails.

**CLOSED AREAS:** Areas, roads and trails where the use of OHVs are permanently or temporarily prohibited. Emergency use of vehicles is allowed.

**Overgrazing:** Consumption of vegetation by herbivores beyond the endurance of a plant to survive.

**Pedestaling:** The occurrence of plants or rocks on pedestals means that the soil has eroded away from the base of the plant or rock and it has become slightly elevated above



the eroded surface of the soil. The height of the pedestals and the degree of root exposure can serve as indicators of the degree of soil loss.

**Perennial Plant Species:** A plant that has a life cycle of three years or more.

**Perennial Stream:** A stream or portion of a stream which flows continually.

**Permeability Rate (soil):** The rate at which gases, liquids (water), or plant roots penetrate or pass through a bulk mass of soil or a layer of soil.

**Permittee:** One who holds a permit to graze livestock on public land.

**Petroglyph:** A form of rock art manufactured by incising, scratching or pecking designs into rock surfaces.

**Phenology:** The study of the time of appearance of characteristic periodic events in the life cycles of organisms in nature and how these events are influenced by environmental factors.

**Pictograph:** A form of rock art created by applying mineral based or organic paint to rock surfaces.

**Plant Community:** Assemblage of plant populations in a defined area or physical habitat; an aggregation of plants similar in species composition and structure, occupying similar habitats over the landscape. (See vegetation community type.)

**Playa:** The usually dry and nearly level lake plain that occupies the lowest part of a closed depression.

**Potential Natural Community:** The stable biotic (plant and/or animal) community that would become established on an ecological site if all successional stages were completed without human interference under present environmental conditions.

**Predator:** An animal that preys on one or more other animals.

**Prescribed Fire (Prescribed Burn):** A controlled wildland fire ignited by humans under specified conditions, to accomplish specific, planned resource objectives. This practice is also known as "controlled burning".

**Primitive:** One of the six classes of the recreation opportunity spectrum. Primitive areas offer recreation opportunities for isolation from the sights and sounds of human activities, where a visitor can feel a part of the natural environment, experience a high degree of challenge and risk, and use outdoor skills.

**Properly Functioning Condition (Riparian-wetlands):** Riparian-wetland areas are functioning properly when adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high water flows, thereby reducing



erosion and improving water quality; filter sediment, capture bedload, and aid in floodplain development; improve floodwater retention and groundwater recharge; develop root masses that stabilize streambanks against cutting action; develop diverse ponding and channel characteristics to provide the habitat and water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and support greater biodiversity. The functioning condition of riparian-wetland areas is influenced by land form, soil, water, and vegetation.

**Properly Functioning Condition(Uplands):** Uplands are functioning properly when the existing vegetation and ground cover maintain soil conditions capable of sustaining natural biotic communities. The functioning condition of uplands is influenced by land form, soil, water, and vegetation.

**Proposed Species:** A species of plant or animal formally proposed by the U.S. Fish and Wildlife Service (USFWS) to be listed as threatened or endangered under the Endangered Species Act.

**Public Land:** Any land and interest in land owned by the United States and administered by the Secretary of the Interior through the Bureau of Land Management, without regard to how the United States acquired ownership, except:

- (a) Lands located on the Outer Continental Shelf;
- (b) Lands held for the benefit of Indians, Aleuts, and Eskimos;
- (c) Lands which the United States retains the minerals, but the surface is private.

**Range Condition:** The present state of the plant community on a range site in relation to the potential natural plant community for that site.

**Range Improvement:** A structure, development or treatment used to rehabilitate, protect or improve the public lands to advance range betterment.

**Range Management:** The science and art of optimizing the returns from rangelands in those combinations most desired by and suitable to society through the manipulation of range ecosystems.

**Range Site:** Rangeland that differs in its ability to produce a characteristic natural plant community. A range Site is the product of all the environmental factors responsible for its development. It is capable of supporting a native plant community typified by an association of species that differ from other range sites in the kind or proportion of species or in total production.

**Rangeland Condition (Ecological):** The present state of the vegetation on a range site in relation to the climax (natural potential) plant community for that site. It is an expression of the relative degree to which the kinds, proportions, and amounts of plants in a plant community resemble that of the climax plant community for that site. Rangeland Condition is basically an Ecological rating of the plant community. Four



classes are used to express the degree to which the composition of the present plant community reflects that of the climax:

Condition Class	Range Site
Excellent	76-100
Good	51-75
Fair	26-50
Poor	0-25

**Rangeland Condition Trend:** The direction of change in Rangeland condition.

**Raptor:** Any predatory bird (such as falcon, hawk, eagle, or owl) that has feet with sharp talons or claws adapted for seizing prey and a hooked beak for shearing flesh.

**Reach:** A continuous unbroken stretch of a stream with homogeneous characteristics; a section of stream between two tributaries of that stream.

**Recreation Opportunity Spectrum:** A continuum used to characterize recreation opportunities in terms of, setting, activity and experience opportunities. Six classes are included: Primitive, Semiprimitive Nonmotorized, Semiprimitive Motorized, Roded natural, Rural and Modern urban.

**Recruitment:** Addition to a plant or animal population from all sources, including reproduction, immigration, and stocking.

**Right-of-Way (ROW):** An easement or permit, which authorizes public land to be used for a specified purpose that generally requires a long narrow strip of land. Examples are roads, powerlines, pipelines, etc.

**Recreation Visitor Day:** An aggregation of 12 visitor hours. A visitor hour is the presence of one or more persons on land and water for outdoor recreation for periods totaling 60 minutes; one person for one hour, two persons for one-half hour and so on.

**Resource Advisory Council (RAC):** A group established pursuant to 43 CFR 1780 and other authorities to advise BLM on resource management issues. In the California Desert District , the California Desert District Advisory Council serves as the RAC.

**Riparian:** The transition area between an aquatic ecosystem and an adjacent terrestrial ecosystem identified by soil characteristics or distinctive vegetation communities that require free or unbound water.

**Riparian Zone:** The banks and adjacent areas of water bodies, water courses, seeps, springs and meadows, whose waters provide soil moisture sufficiently in excess of that



otherwise available locally so as to provide a more moist habitat than that of contiguous plains and uplands.

**Roaded Natural:** One of the six classes of the recreation opportunity spectrum. Roaded natural areas offer about equal opportunities for affiliation with other user groups or isolation from sights and sounds from human activity. Such areas provide the opportunity for visitors to have a high degree of interaction with the natural environment. Challenge and risk opportunities are not very important except in specific challenging activities. The practice of outdoor skills may be important. Opportunities for both motorized and non-motorized recreation are present.

**Rock Art (Petroglyph or Pictograph):** An Archaic to modern cultural site type consisting of incised or painted figures such as people, animals, plants or abstracts on a rock surface.

**Rock Shelter:** A cultural site representative of all periods consisting of an area protected by an overhanging cliff. Often associated with the same materials as a campsite or rock art.

**Runoff:** A general term used to describe the portion of precipitation on the land that ultimately reaches streams; may include channel and non-channel flow.

**Rural:** One of the six classes of the recreation opportunity spectrum. In rural areas, opportunities to experience recreation in affiliation with groups and individuals are prevalent, as is the convenience of recreation sites. These factors are generally more important than the natural setting. Opportunities for wildland challenges, risk taking, and testing of outdoor skills are unimportant except in activities involving challenge and risk.

**Sand:** Individual rock and mineral fragments in a soil that range in diameter from 0.05 to 2.0 millimeters. Most sand grains consists of quartz, but they may be of any mineral composition. The textural class name of any soil that contains 85% or more sand and less than 10% clay.

**Scale:** The degree of resolution used in observing and measuring ecosystem processes, structures and changes over space and time.

**Season of Use:** The time during which livestock grazing is permitted on a given area, as specified in the grazing permit and/or terms and conditions.

**Section:** One square mile or 640 acres.

**Sediment:** Solid, clastic material, both mineral and organic, that is in suspension, is being transported, or has been moved from its site of origin by water, wind, or ice and has come to rest on the earth's surface.



**Seeps:** Groundwater discharge areas. In general, seeps have less water flow than a spring

**Semi-Primitive Motorized Recreation:** One of the six classes of the recreation opportunity spectrum. Semiprimitive motorized areas offer some opportunities for isolation from the sights and sounds of human activities, but this is not as important as opportunities for primitive recreation. Use of these areas involves the opportunities for visitors to have a high degree of interaction with the natural environment, to have moderate challenge and risk, and use outdoor skills. Such an area provides explicit opportunity to use motorized equipment while in the area.

**Semi-Primitive Non-Motorized Recreation:** One of the six classes of the recreation opportunity spectrum. Semiprimitive non-motorized areas offer some opportunities for isolation from the sights and sounds of human activities, but this is not as important as opportunities for primitive recreation. Use of these areas involves the opportunities for visitors to have a high degree of interaction with the natural environment, to have moderate challenge and risk, and use outdoor skills.

**Seral Stage (State):** Pertaining to the successional stages of biotic communities. One of a series of biotic communities that follow one another in time on any given ecological site (See Succession).

**Severe Use:** Utilization in excess of 80%.

**Sex Ratio :** The ratio existing between the number of male and female animals within a given herd, band or population.

**Sheet Erosion:** The removal of a fairly uniform layer of soil or materials from the land surface by rainfall or runoff water.

**Short-Term Impact:** Ten years or less; approximately the year 2009

**Silt:** Sedimentary material consisting primarily of mineral particle intermediate in size between sand and clay.

**Sinuosity:** Pertaining to the curves, bends, or turns in watercourses.

**Slight use:** Indicates that 0 to 20% of the current years forage production has been eaten or destroyed by grazing animals.

**Soils:** (a) The unconsolidated mineral material on the immediate surface of the earth that serves as the natural medium for the growth of land plants. (b) The unconsolidated mineral matter of the surface of the earth that has been influenced by genetic and environmental factors including parent material, climate, topography, all acting over a



period of time and producing soil that differs from the parent material in physical, chemical, biological and morphological properties and characteristics.

**Soil Associations:** (a) A group of defined and named taxonomic soil units occurring together in an individual and characteristic pattern over a geographic region, comparable to plant associations in many ways. (b) A soil-mapping unit in which two or more defined taxonomic units occurring together in a characteristic pattern are combined because of map scale or intermixing of taxonomic units.

**Soil Compaction:** A decrease in the volume of soil as a result of compression stress from livestock trampling as an example.

**Soil (Ground) Cover:** The percentage of material, other than bare ground, covering the land surface. Soil cover may include live vegetation, standing dead vegetation, plant litter, cobble, gravel, stones, and bedrock

**Soil Depth:**

Lower Boundary in inches	
Very shallow	0-12
Shallow	12-20
Moderately Deep	20-36
Deep	36-40
Very Deep	40-+

**Soil Productivity:** Capacity of a soil to produce biomass through plant growth.

**Soil Profile:** A succession of soil zones or horizons beginning at the surface that have been developed through normal soil forming processes.

**Soil Series:** A group of soils having genetic horizons (layers) that, except for texture of the surface layer, have similar characteristics and arrangement in the profile.

**Special Recreation Management Area (SRMA):** An area where special management or intensive recreation management is needed. Recreation activity plans are required, and greater managerial investment in facilities or supervision can be anticipated.

**Special Status Species:** Plant or animal species listed as endangered, threatened, candidate, or sensitive by Federal or State governments.

**Species:** A fundamental category of plant or animal classification.

**Species Richness:** Number of species, either in total or by some grouping scheme.

**Standards of Rangeland Health:** A description of conditions needed to sustain public land health; relates to all uses of the public lands.



**State Land:** Lands administered by the State Land Department .

**Succession:** An orderly process of community development that involves changes in species structure and community processes with time; it is reasonably directional and, therefore, predictable.

**Suspended Non-Use:** AUMs withdrawn from authorized use; may potentially be re-authorized for use if range conditions improve.

**Sustainability:** The ability to maintain diversity, productivity, resilience to stress, health, renewability, and yields of desired values, resource uses, products, or services over time in an ecosystem while maintaining its integrity.

**Sustained Yield:** The achievement and maintenance in perpetuity of a high level of annual or regular periodic output of the various renewable resources of the public lands consistent with multiple use.

**Territory :** The defended part of an animal's range.

**Terms and Conditions:** The provisions and stipulations specified by the BLM as a part of a livestock grazing lease or permit or other land use authorization.

**Threatened Species:** Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range, and as further defined by the Endangered Species Act of 1973.

**Transition Period:** The period of time between completion and adoption of these standards and guidelines and their being placed in operational effect at the individual grazing permit terms and conditions level.

**Trap:** A relatively small enclosure used as a temporary holding or catching area.

**Unit Resource Analysis (URA):** A comprehensive display of inventory and analysis of resources data and an analysis of the current use, production, condition, trend, and use potential and opportunity within a planning unit. The term and document structure is no longer a part of current planning procedures, but may still be found in older planning documents that are still applicable.

**Upland:** Land at a higher elevation than the alluvial plain or low stream terrace; all lands outside the riparian-wetland and aquatic zones.

**Utilization:** The portion of the current year's forage production that is consumed or destroyed by grazing animals.



**Vegetative Community Type:** Refers to the species or various combinations of species which have similar stature, morphology and appearance and dominate or appear to dominate an area of rangeland, thus giving it characteristic. (See plant community.)

**Vegetation Status:** The expression of the relative degree to which the kinds, proportions, and amounts of plants in a community resemble that of the potential plant community (see early seral, mid-seral, late seral and potential plant community)

**Viable populations:** Populations of plants and/or animals that persist for a specified period of time across their range despite normal fluctuations in population and environmental conditions.

**Viewshed:** The landscape that can be directly seen under favorable atmospheric conditions from a viewpoint or along a transportation corridor.

**Vigor (Plant):** Pertaining to characteristics such as a mix of plants with normal growth on the basis of height, color, seed production, rhizome and stolon production, and annual biomass production.

**Visual Resources:** Visible features of the landscape including land, water, vegetation, and animals.

**Visual Resource Management (VRM):** The planning, designing and implementation of management objectives for maintaining scenic value and visual quality on public lands.

**Wetlands:** An area that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions.

**Wilderness Characteristics:** Identified by congress in the 1964 wilderness act; namely size, naturalness, outstanding opportunities for solitude or a primitive and unconfined type of recreation, and supplemental values such as geological, archeological, historical, ecological, scenic, or other features. It is required that the area possess at least 5,000 acres or more of contiguous or be of a size to make practical its preservation and use in an unimpaired condition; be substantially natural or generally appear to have been primarily by the forces of nature, with the imprint of man being substantially unnoticeable; and have either outstanding opportunities for solitude or a primitive and unconfined type of recreation.

**Wilderness Study Areas (WSA):** A roadless area, which has been found to have wilderness characteristics.

**Wilderness Study Criteria:** The criteria and quality standards developed in the Wilderness Study Policy to guide planning efforts in the wilderness EISs.



**Wild Free-Roaming Horse or Burro:** Any and all unbranded and unclaimed horses, burros and their progeny that have used public lands on or after December 15, 1971, or that do use these lands as all or part of their habitat.

**Wild Horse Area:** An area of the public lands which provides habitat for one or more wild horse herds.

**Wildlife:** All living fauna that exists or potentially exists in the area.

**Woody Riparian Species:** Plant species consisting of wood such as trees, shrubs, or bushes found in riparian-wetland areas.

## 6.4 ACRONYMS

### Acronyms and Abbreviations

<b>ACEC</b>	Area of Critical Environmental Concern
<b>ACHP</b>	Advisory Council on Historic Preservation
<b>ADC</b>	Animal Damage Control
<b>AIRFA</b>	<i>American Indian Religious freedom Act of 1978</i>
<b>AML</b>	Appropriate Management Level
<b>AMP</b>	Allotment Management Plan
<b>AMS</b>	Analysis of the Management Situation
<b>APE</b>	Area of Potential Effect
<b>AQCR</b>	Air Quality Control Regions
<b>AQS</b>	Air Quality Standard
<b>ARMP</b>	Approved Resource Management Plan
<b>ATB</b>	All Terrain Bicycle
<b>ATV</b>	All Terrain Vehicle
<b>AUM</b>	Animal Unit Month
<b>BCB</b>	Back Country Byway
<b>BMP</b>	Best Management Practices
<b>BO</b>	Biological Opinion
<b>BOR</b>	Bureau of Reclamation
<b>BLM</b>	Bureau of Land Management
<b>BP</b>	Before Present (Present is equated as 1950)
<b>B to V</b>	Barstow to Las Vegas Racecourse
<b>CA</b>	California
<b>CEQ</b>	Council on Environmental Quality
<b>CEQA</b>	<i>California Environmental Quality Act</i>
<b>CDCA</b>	California Desert Conservation Area
<b>CDFG</b>	California Department of Fish and Game
<b>CDPA</b>	<i>California Desert Protection Act of 1994</i>
<b>CEQA</b>	<i>California Environmental Quality Act</i>
<b>CESA</b>	<i>California Endangered Species Act</i>
<b>CFR</b>	Code of Federal Regulations



Northern & Eastern Mojave Draft Environmental Impact Statement  
Chapter VI: Document Support

<b>CPHI</b>	California Points of Historic Interest
<b>CHL</b>	California Historic Landmarks
<b>CHU</b>	Critical Habitat Unit
<b>CNDDDB/NNDDDB</b>	California/Nevada Natural Diversity Database
<b>CNPS</b>	California Native Plant Society
<b>CRBSP</b>	Colorado River Basin Salinity Project
<b>CRC</b>	Colorado River Commission
<b>CRMP</b>	Coordinated Resource Management and Planning
<b>DAG</b>	Desert Access Guide
<b>DCA</b>	Desert Conservation Area
<b>DCP</b>	Desert Conservation Plan
<b>DEIS</b>	Draft Environmental Impact Statement
<b>DLE</b>	Desert Land Entry
<b>DOD</b>	Department of Defense
<b>DOE</b>	Department of Energy
<b>DOI</b>	Department of the Interior
<b>DPC</b>	Desired Plant Community
<b>DRMP</b>	Draft Resource Management Plan
<b>DRP</b>	Draft Resource Plan
<b>DT</b>	Desert Tortoise
<b>DTRP</b>	<i>Desert Tortoise Recovery Plan, June 1994</i>
<b>DWMA</b>	Desert Wildlife Management Area
<b>DVNP</b>	Death Valley National Park
<b>EA</b>	Environmental Assessment
<b>ECC</b>	Erosion Condition Class
<b>EIR</b>	Environmental Impact Report
<b>EIS</b>	Environmental Impact Statement
<b>EPA</b>	Environmental Protection Agency
<b>ESA</b>	<i>Endangered Species Act of 1973</i>
<b>ESL</b>	Endangered Species List
<b>ESR</b>	Erosion Susceptibility Rating
<b>ERMA</b>	Extensive Recreation Management Area
<b>FCR</b>	Field Contact Representative
<b>FDWA</b>	Federal Drinking Water Standards
<b>FEIS</b>	Final Environmental Impact Statement
<b>FEMA</b>	Fire Fuels Management Area
<b>FESA</b>	<i>Federal Endangered Species Act</i>
<b>FLPMA</b>	<i>Federal Land Policy and Management Act</i>
<b>FMIR</b>	Fort Mojave Indian Reservation
<b>FP</b>	Flood Plain
<b>FRP</b>	Fire Rehabilitation Plan
<b>FSA</b>	Fire Suppression Area
<b>FUA</b>	Fire Use Area
<b>FY</b>	Fiscal Year
<b>GAO</b>	General Accounting Office



Northern & Eastern Mojave Draft Environmental Impact Statement  
Chapter VI: Document Support

<b>GEM</b>	Geology, Energy, Minerals (Survey)
<b>GIS</b>	Geographic Information Systems
<b>GMP</b>	General Management Plan
<b>HAZMAT</b>	Hazardous Material
<b>HCP</b>	Habitat Conservation Plan
<b>HMA</b>	Habitat/Herd Management Area
<b>HMAP</b>	Herd Management Area Plan
<b>HMP</b>	Habitat Management Plan
<b>I-XX</b>	Interstate
<b>IBLA</b>	Internal Board of Land Appeals
<b>ICMP</b>	Interim Critical Management Policy
<b>IMP</b>	Interim Management Policy
<b>IPP</b>	Intermountain Power Project
<b>ISA</b>	Instant Study Area
<b>LADWP</b>	Los Angeles Department of Water and Power
<b>LDA</b>	Lands Disposal Areas
<b>LURS</b>	Land Use Requirements Study
<b>LWCF</b>	Land and Water Conservation Fund
<b>MCL</b>	Mid-Carpace Length
<b>MDA</b>	Mineral Disposal Areas
<b>MFP</b>	Management Framework Plan
<b>Mg/l</b>	Milligrams per liter
<b>MMS</b>	Mineral Management Service
<b>MNP</b>	Mojave National Preserve
<b>MNSAMP</b>	Mojave National Scenic Area Management Plan
<b>MOA</b>	Memorandum of Agreement
<b>MOG</b>	Management Oversight Group
<b>MOU</b>	Memorandum of Understanding
<b>MSA</b>	Management Situation Analysis
<b>MUC</b>	Multiple Use Classification
<b>NAAQS</b>	National Ambient Air Quality Standards
<b>NBS</b>	National Biological Service
<b>NECO</b>	Northern and Eastern Colorado Desert Planning Effort
<b>NEMO</b>	Northern and Eastern Mojave Planning Effort
<b>NEPA</b>	<i>National Environmental Policy Act of 1969</i>
<b>NERC</b>	National Ecology Research Center
<b>NHA</b>	Natural Hazard Area
<b>NHPA</b>	<i>National Historic Preservation Act of 1966</i>
<b>NOI</b>	Notice of Intent
<b>NPS</b>	National Park Service
<b>NRCS</b>	National Resources Conservation Service (Previously SCS)
<b>NRHP</b>	National Register of Historic Places
<b>NRI</b>	National Rivers Inventory
<b>NRFTF</b>	National Range Studies Task Force
<b>NV</b>	Nevada



Northern & Eastern Mojave Draft Environmental Impact Statement  
Chapter VI: Document Support

<b>NWR</b>	National Wildlife Refuge
<b>OHV</b>	Off-Highway Vehicle
<b>ONA</b>	Outstanding Natural Areas
<b>PFC</b>	Proper Functioning Condition
<b>PNC</b>	Potential Natural Community
<b>PRP</b>	Proposed Resource Plan
<b>PRMP/FEIS</b>	Proposed Resource Management Plan/Final Environmental Impact Statement
<b>PL</b>	Public Law
<b>RAMP</b>	Recreation Activity/Area Management Plan
<b>RDRA</b>	Road Designation Restriction Areas
<b>R&amp;PP</b>	Recreation and Public Purpose (Act)
<b>RFDS</b>	Reasonable Foreseeable Development Scenario
<b>RFFA</b>	Reasonably Foreseeable Future Action
<b>RL</b>	Recreation Lands
<b>RMA</b>	Recreation Management Area
<b>RMP</b>	Resource Management Plan
<b>RNA</b>	Resource Natural Area
<b>RPP</b>	Recreation and Public Purpose Act
<b>RPS</b>	Rangeland Program Summary
<b>ROD</b>	Record of Decision
<b>ROS</b>	Recreation Opportunity Spectrum
<b>ROW</b>	Right-of-Way
<b>RRR</b>	Road Designation Restriction Areas
<b>RU</b>	Recovery Units
<b>RZ</b>	Riparian Zone
<b>SCS</b>	Soils Conservation Service (Name Changed to NRCA)
<b>SA</b>	Special Areas
<b>S&amp;G</b>	Standards and Guidelines
<b>SHPO</b>	State Historic Preservation Office
<b>SIP</b>	State Implementation Plan (Air Quality)
<b>SLC</b>	State Lands Commission
<b>SMA</b>	Special Management Area
<b>SMARA</b>	<i>Surface Mining and Reclamation Act of 1976</i>
<b>SR</b>	State Route (Highway)
<b>SRMA</b>	Special Recreation Management Area
<b>SSP</b>	Special Status Plant
<b>SSS</b>	Special Status Species
<b>T&amp;E</b>	Threatened and Endangered (Species)
<b>TAS</b>	Total Adjusted Sign
<b>TCP</b>	Traditional Cultural Property
<b>TDS</b>	Total Dissolved Solids
<b>TLA</b>	Traditional Lifeway Area
<b>TMA</b>	Tortoise Management Area
<b>UPA</b>	Unusual Plant Assemblages
<b>URTD</b>	Upper Respiratory Tract Disease



<b>USMC</b>	United States Marine Corps
<b>US</b>	United States
<b>USC</b>	United States Code
<b>USDA</b>	United States Department of Agriculture
<b>USDI</b>	United States Department of the Interior
<b>USGS</b>	United States Geological Survey
<b>USFS</b>	United States Forest Service
<b>USFWS</b>	United States Fish and Wildlife Service
<b>VRM</b>	Visual Resource Management
<b>WA</b>	Wilderness Area
<b>WAPA</b>	Western Area Power Administration
<b>WH&amp;B</b>	Wild Horse and Burros
<b>WHBA</b>	<i>Wild Horse and Burro Act</i>
<b>WMP</b>	Watershed Management Plan
<b>WSA</b>	Wilderness Study Area
<b>WSR</b>	Wild and Scenic River



**This Page Intentionally Left Blank**





UNITED STATES DEPARTMENT OF INTERIOR  
BUREAU OF LAND MANAGEMENT  
CALIFORNIA DESERT DISTRICT



# ***DRAFT ENVIRONMENTAL IMPACT STATEMENT***

## **GEOGRAPHIC INFORMATION INDEX MAPS**



**JANUARY 2001**







## **7.0 GEOGRAPHIC INFORMATION INDEX**

### **Figure Index**

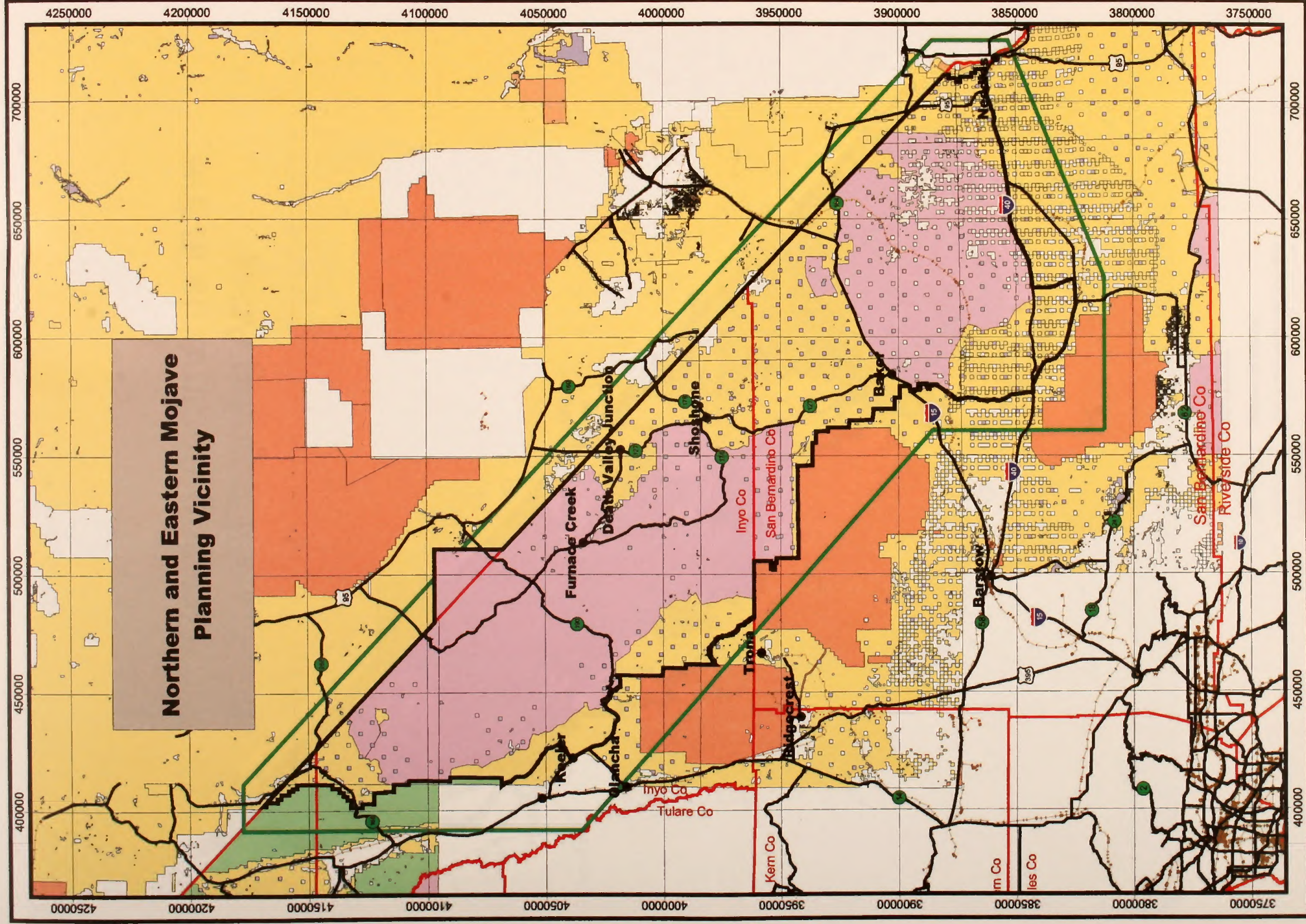
- 1. Northern and Eastern Mojave Planning Vicinity**
- 2. Grazing Allotments in the Planning Area**
- 3a. NEMO Active Mines and Mineral Potential**
- 3b. Inactive Mines in the NEMO Planning Area**
- 4a. Route Network - Piute-Fenner**
- 4b. Route Network - Ivanpah Valley**
- 4c. Route Network - Shadow Valley**
- 5a. Released Lands - Alternative 1 (No Action)**
- 5b. Released Lands - Alternative 2**
- 5c. Released Lands - Alternative 3**
- 6a. Desert Tortoise Recovery - Alternative 1 (No Action)**
- 6b. Desert Tortoise Recovery - Alternative 2**
- 6c. Desert Tortoise Recovery - Alternative 3**
- 6d. Desert Tortoise Recovery - Alternative 4**
- 6e. Desert Tortoise Recovery - Alternative 5**
- 7a. Grazing Management - Alternative 1 (No Action) & 4**
- 7b. Grazing Management - Alternative 2**
- 7c. Grazing Management - Alternative 3 & 5**
- 8a. BLM Herd Areas and Herd Management Areas**
- 8b. Extent of Burro Range in the NEMO Planning**
- 8c. Herd Management Area Alternative for Desert Tortoise Recovery**



Northern & Eastern Mojave Draft Environmental Impact Statement  
Chapter VII: Geographic Information Index

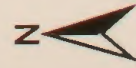
- 9a. Amargosa Vole Recovery - Alternative 1 (No Action)**
- 9b. Amargosa Vole Recovery - Alternative 2**
- 9c. Amargosa Vole Recovery - Alternative 3**
- 9d. Amargosa Vole Recovery - Alternative 4**
- 9e. Amargosa Vole Recovery-Upper Amargosa - Alternative 2 & 3**
- 10. Carson Slough Threatened and Endangered Plant Recovery**
- 11. Silurian Hills Bat Conservation Alternatives**
- 12. Greenwater ACEC Deletion Proposal**
- 13a. Land Tenure Proposal**
- 13b. Land Tenure - Tecopa - Shoshone**
- 13c. Land Tenure - Mesquite Lake Area**
- 13d. Land Tenure - Baker Area**
- 14. Barstow-To-Vegas Race Course Alternatives**





**Northern and Eastern Mojave  
Planning Vicinity**

- Planning Area Boundary
- Study Area Boundary
- Private
- Military
- Tribal Lands
- State Lands
- National Park Service
- Public Lands (BLM)
- US Forest Service



**Figure 1**







# Grazing Allotments in the Planning Area



0 20 40 60 80 Miles

Figure 2







# NEMO Active Mines & Mineral Potential

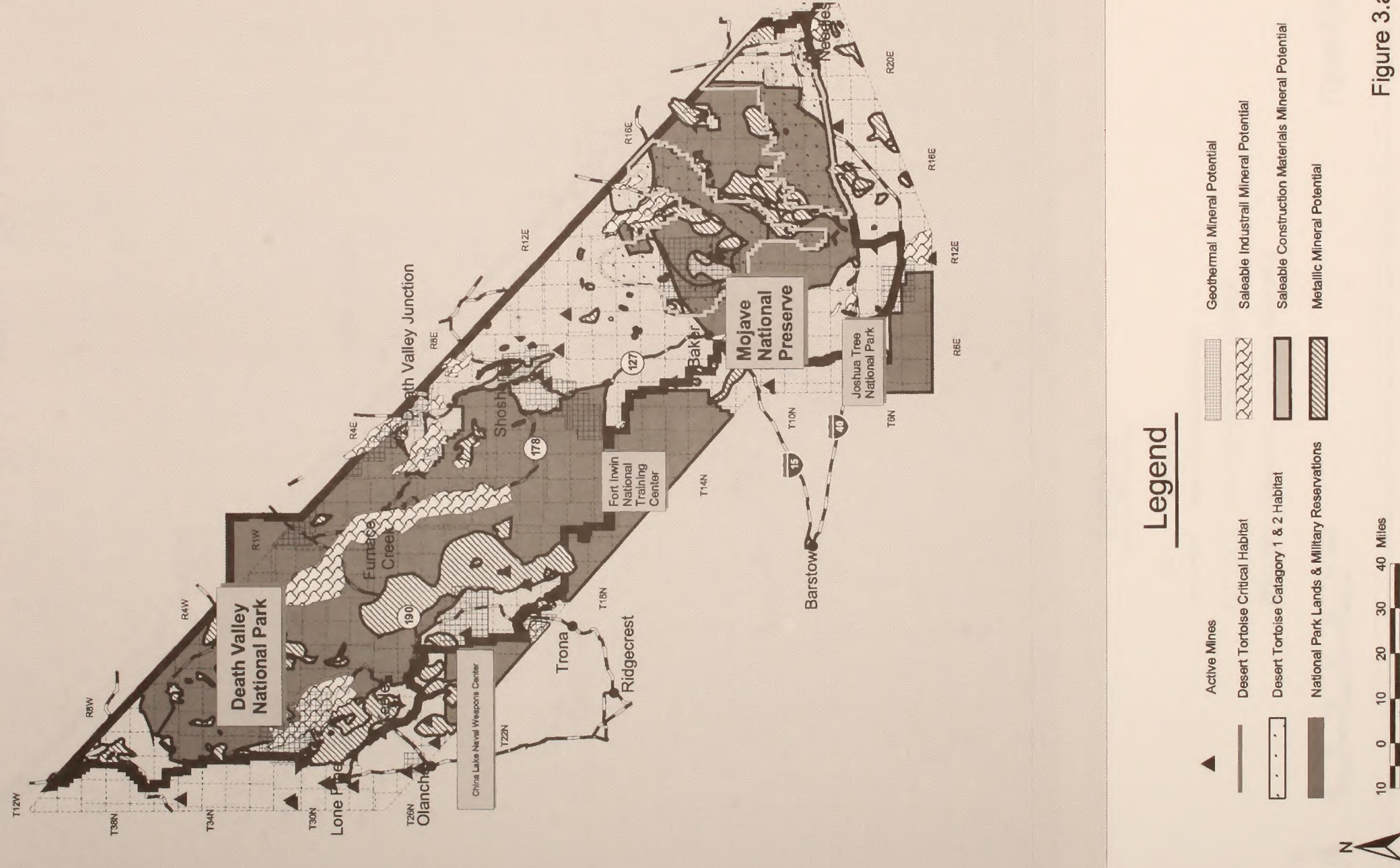


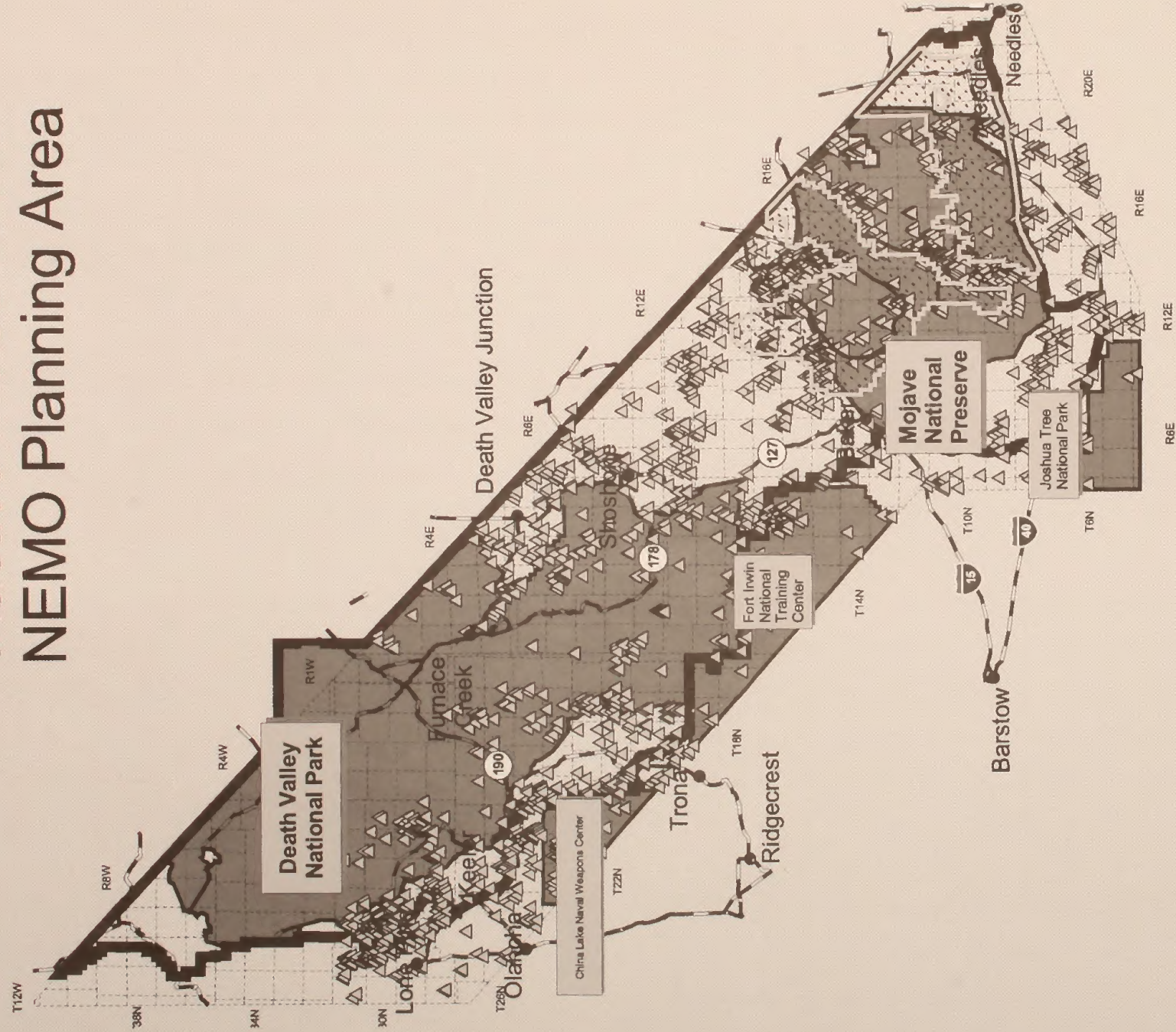
Figure 3.a.











# Inactive Mines in the NEMO Planning Area



## Legend

-  Inactive Mines
-  Desert Tortoise Critical Habitat
-  Desert Tortoise Category 1 & 2 Habitat
-  National Park Lands & Military Reservations

10 0 10 20 30 40 Miles



Figure 3.b.


















**NEMO Route Designation  
Piute-Fenner Valley  
DT Cat. I & Critical Habitat**

**Legend**

- |   |                                       |   |               |
|---|---------------------------------------|---|---------------|
|  | DWMA Boundary                         |  | Private Lands |
|  | Critical Tortoise<br>Habitat Boundary |  | State Lands   |
|  | Wilderness Boundary                   |  | NPS Lands     |
|  | Open Route                            |  | BLM Lands     |
|  | Closed Route                          |   |               |
|  | Limited Access Route                  |   |               |
|  | Private Access Route                  |   |               |



0 2 4 6 Miles

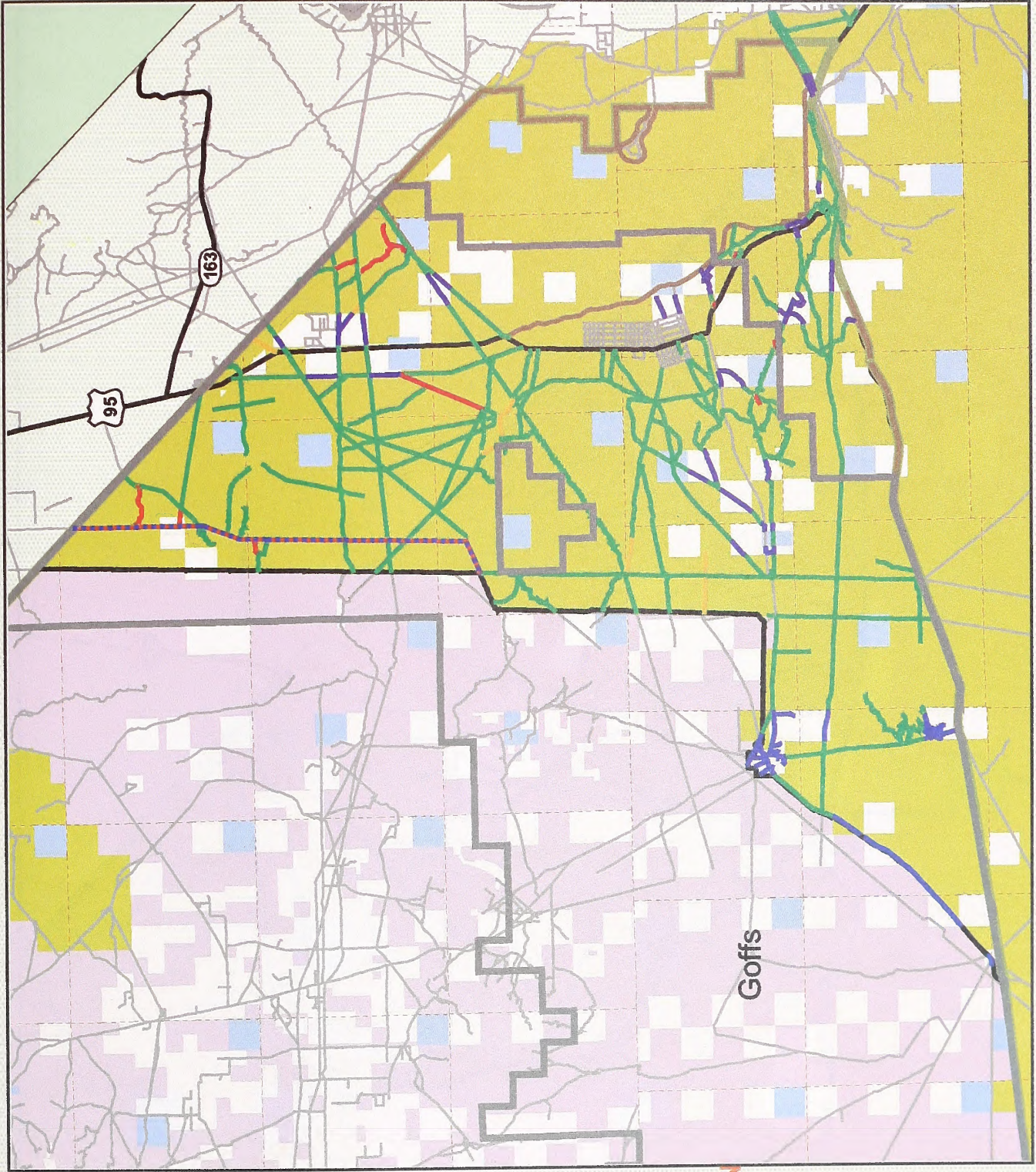


T10N

R20E

Goffs

**Figure 4.a.**





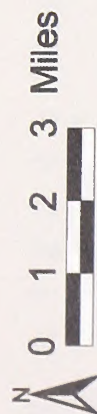




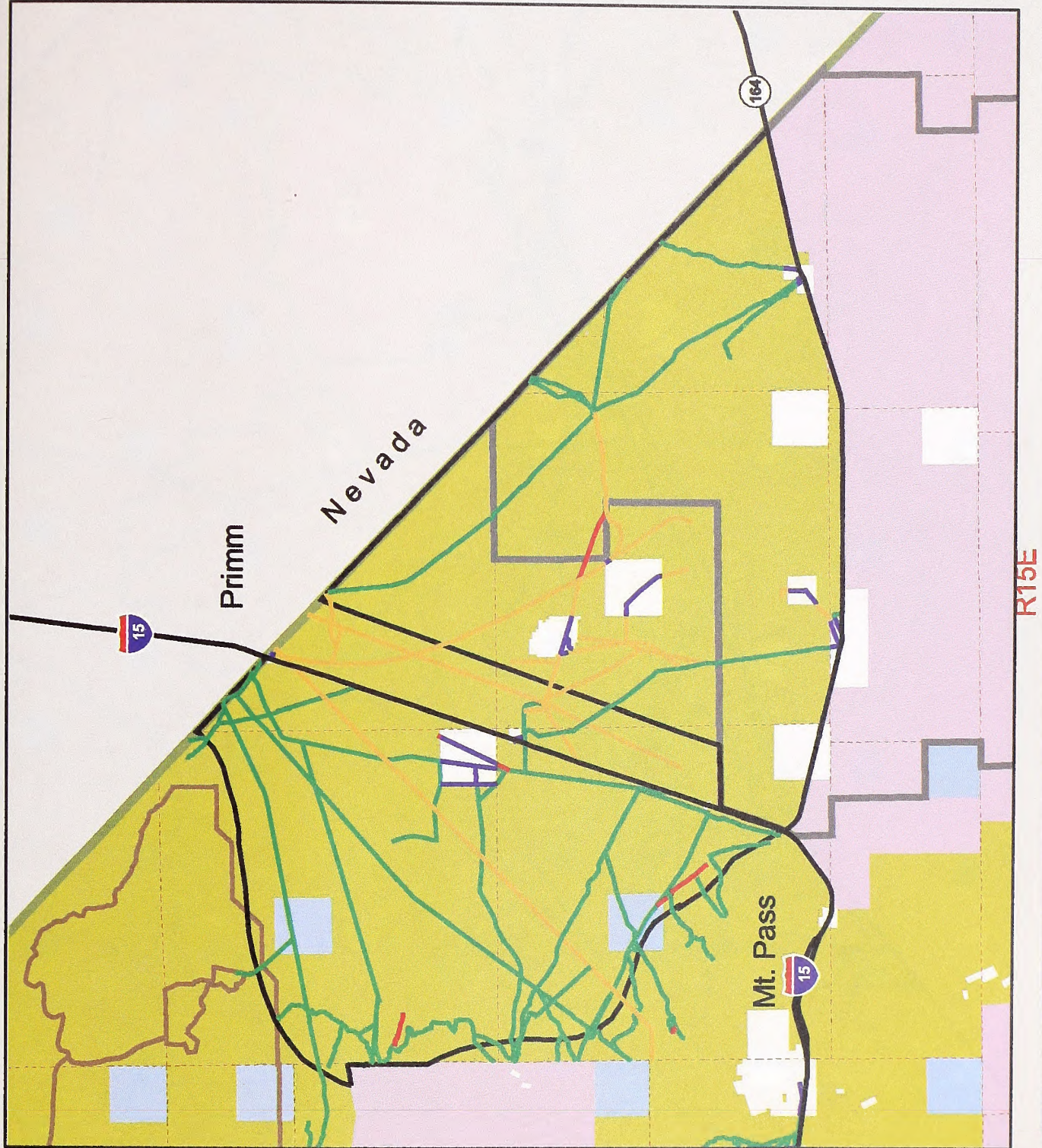
**NEMO Route Designation  
Ivanpah Valley  
Desert Tortoise  
Conservation Area**

**Legend**

-  DWMA Boundary
-  Critical Tortoise Habitat Boundary
-  Wilderness Boundary
-  Open Route
-  Closed Route
-  Limited Access Route
-  Private Access Route
-  Private Lands
-  State Lands
-  NPS Lands
-  BLM Lands



**Figure 4.b.**



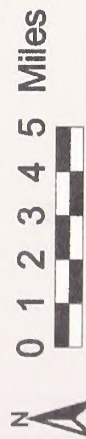
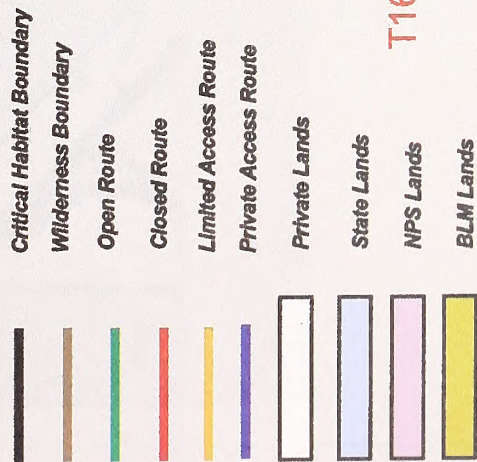




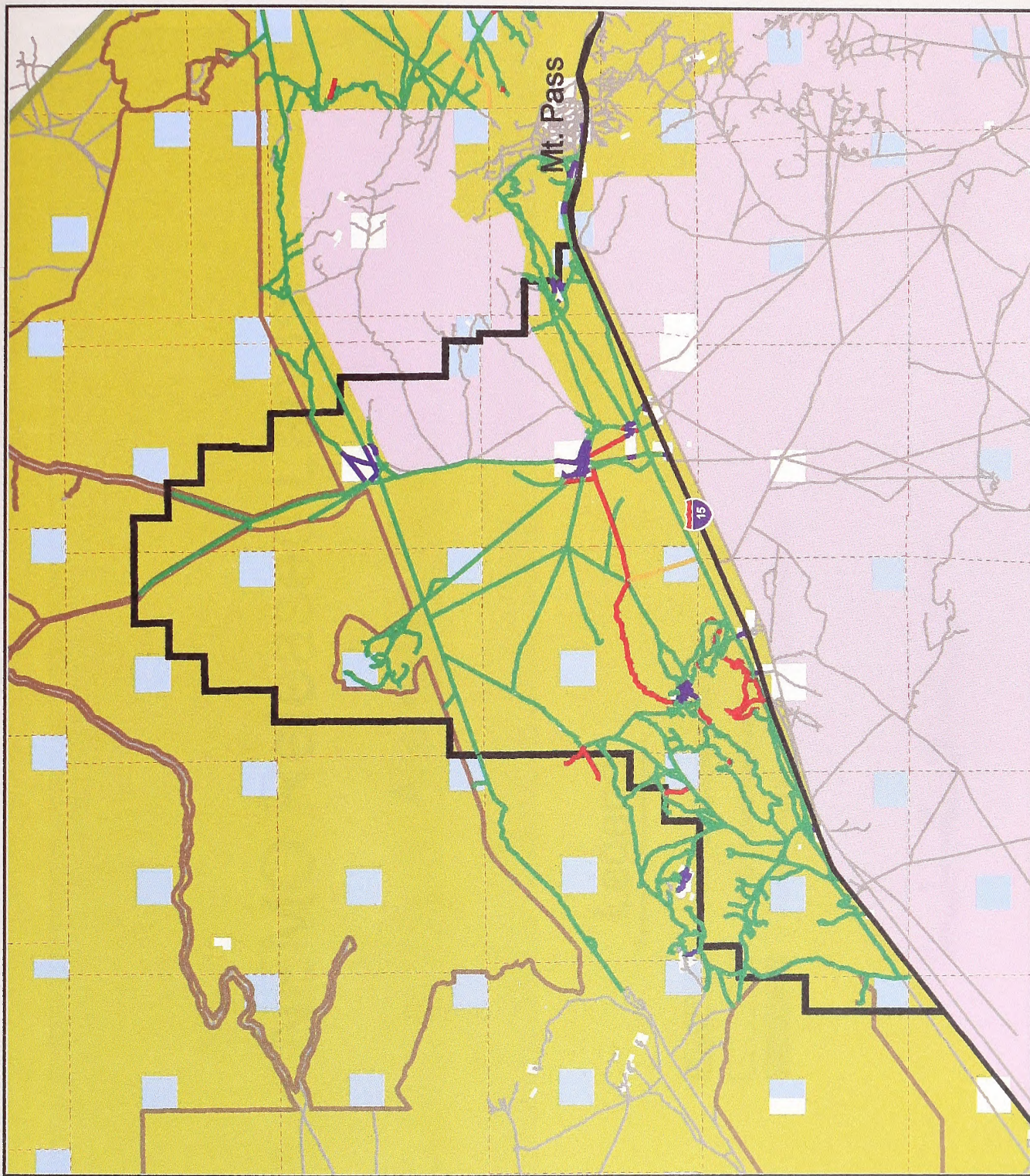


# **NEMO Route Designation Shadow Valley Desert Tortoise Conservation Area**

## **Legend**



**Figure 4.c.**



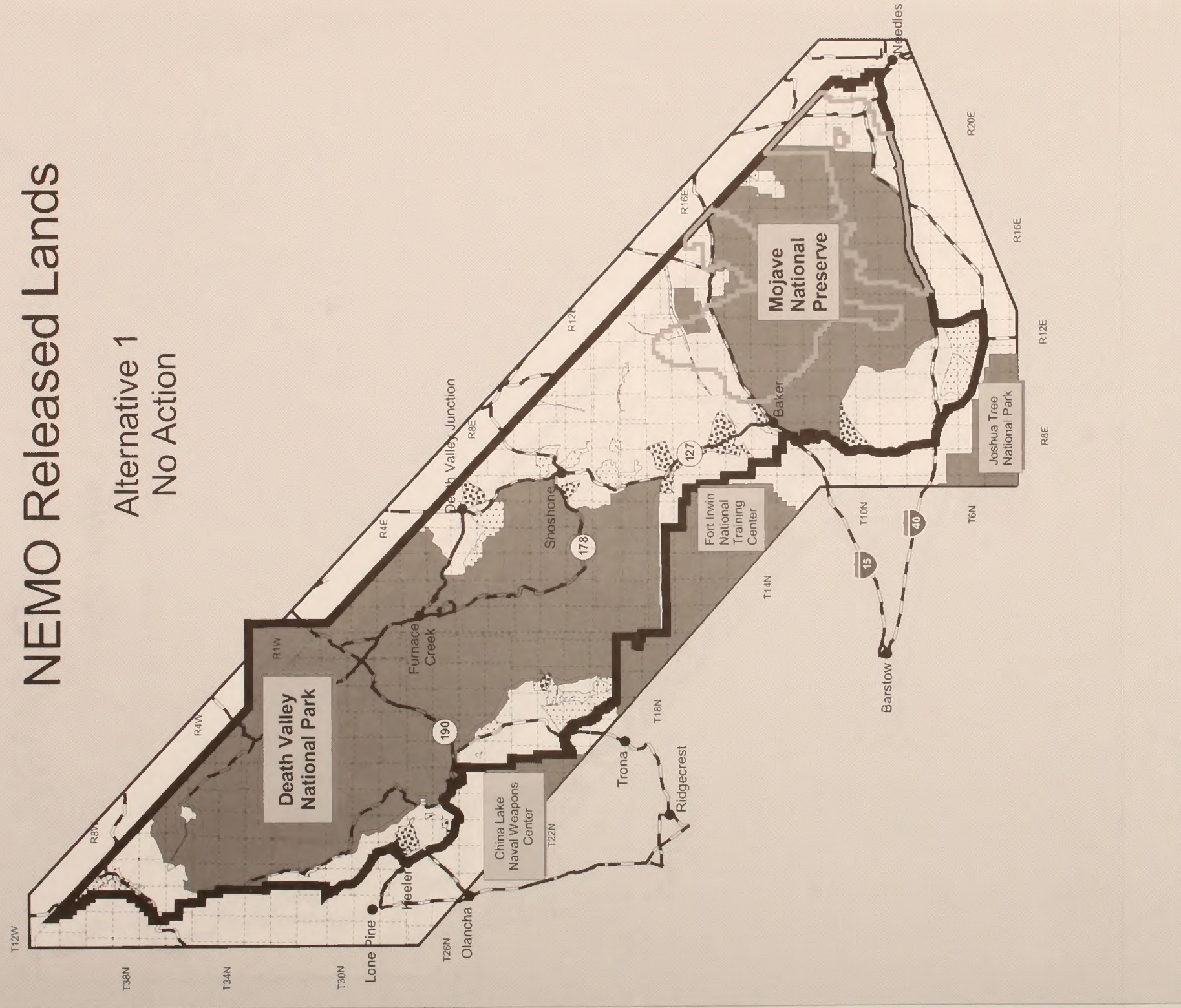






# NEMO Released Lands

Alternative 1  
No Action



## Legend

- MUC Moderate Released Lands
- MUC Limited Released Lands
- National Park Lands & Military Reservations



Figure 5.a.

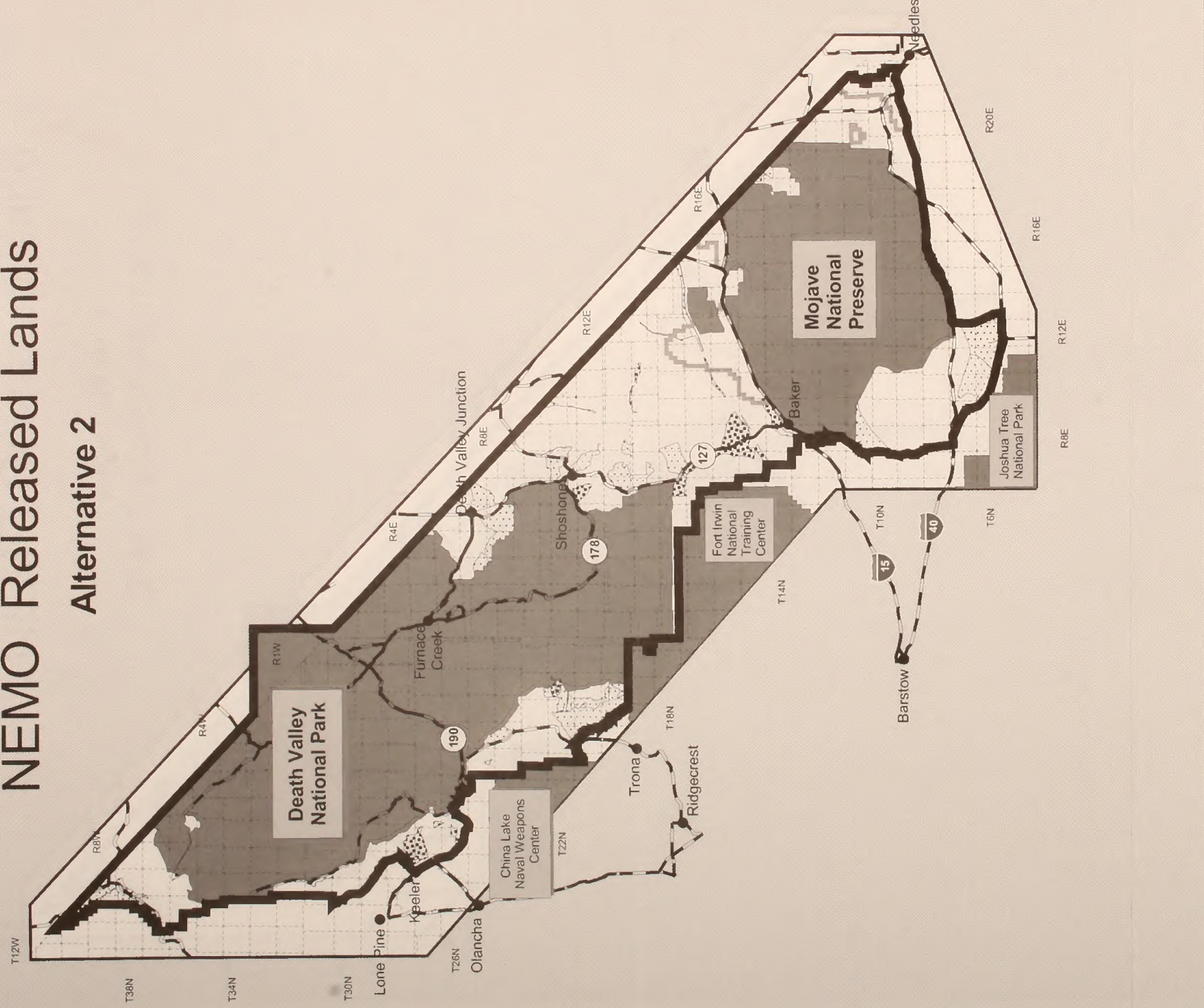






# NEMO Released Lands

## Alternative 2



### Legend


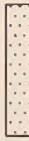
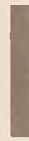
-  MUC Moderate Released Lands
-  MUC Limited Released Lands
-  National Park Lands & Military Reservations



Figure 5.b.







# NEMO Released Land

Alternative 3  
BLM Preferred Alternative



## Legend

- MUC Moderate Released Lands
- MUC Limited Released Lands
- National Park Lands & Military Reservation



10 0 10 20 30 40 Miles

Figure 5.c.



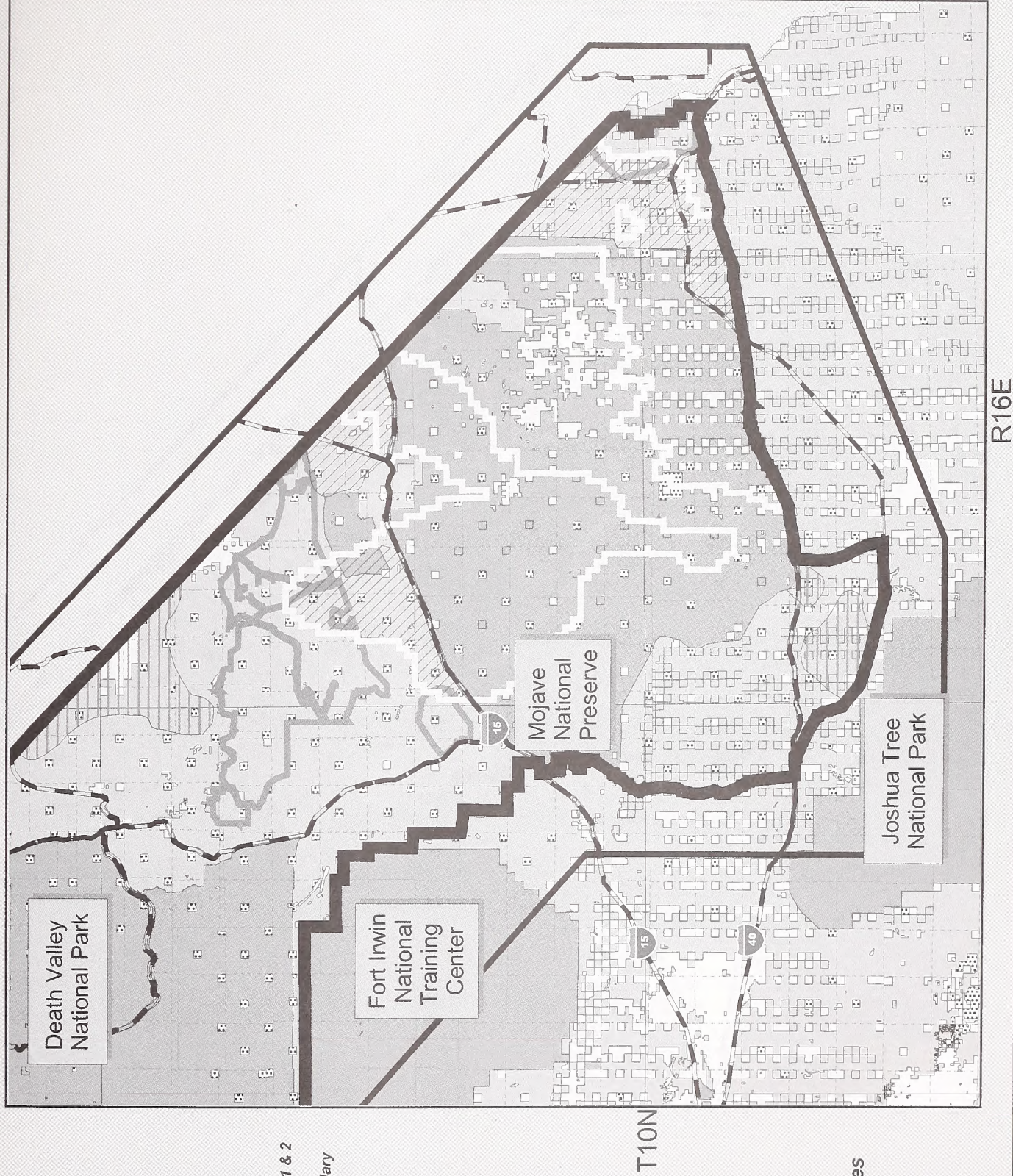




# **Alternative 1: Desert Tortoise Recovery in the Planning Area**

## **Legend**

- Wilderness in DT Cat 1 & 2
- Critical Habitat Boundary
- Desert Tortoise Cat. 1
- Desert Tortoise Cat. 3
- Private Lands
- State Lands
- BLM Lands
- Other Federal Lands



**Figure 6.a.**





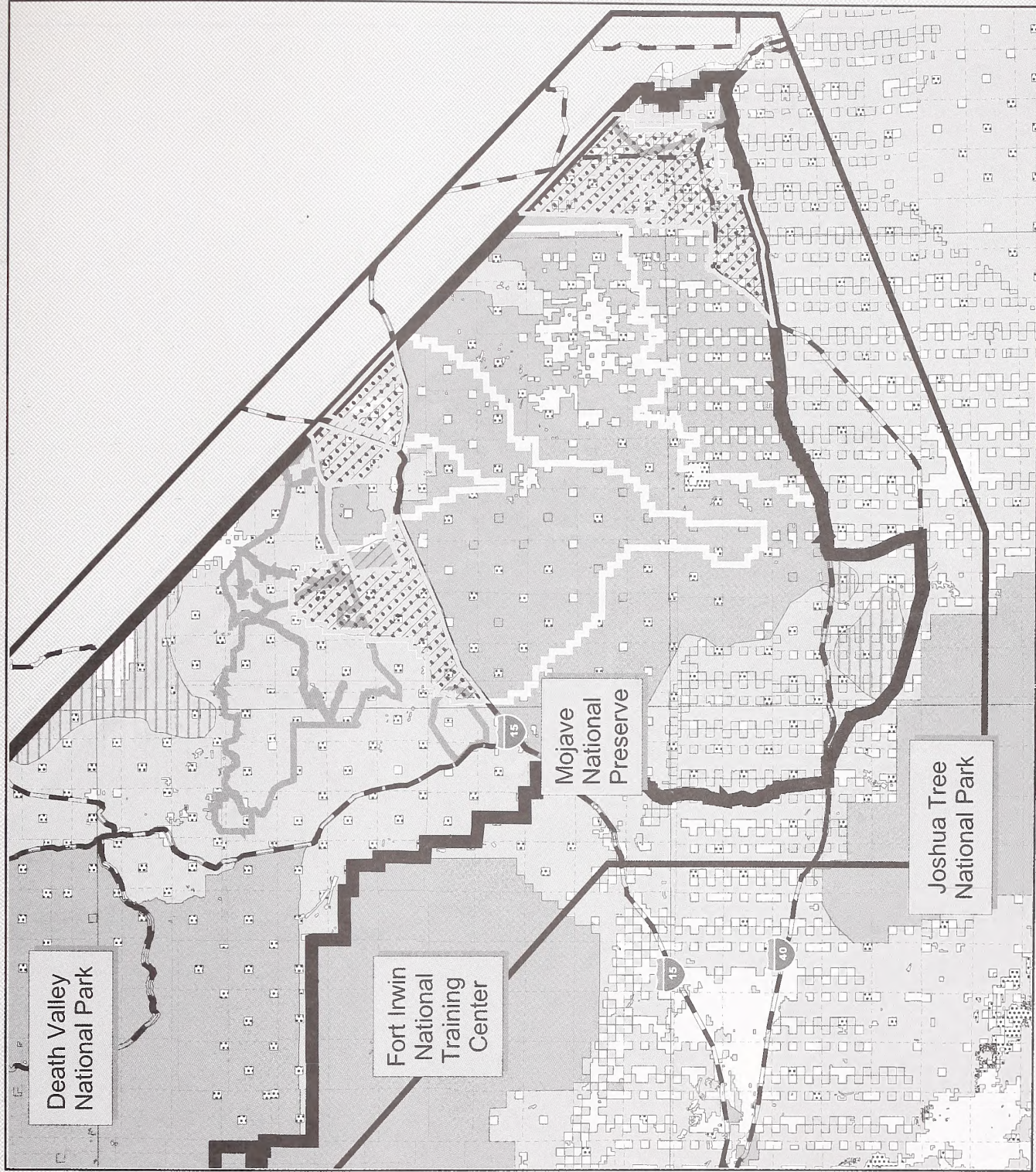


# **Alternative 2: Desert Tortoise Recovery in the Planning Area**

## **Legend**

- Wilderness in DT Cat 1 & 2
- Critical Habitat Boundary
- Alternative 2 ACECs
- Desert Tortoise Cat. 1
- Desert Tortoise Cat. 3
- Private Lands
- State Lands
- BLM Lands
- Other Federal Lands

T10N



**Figure 6.b.**



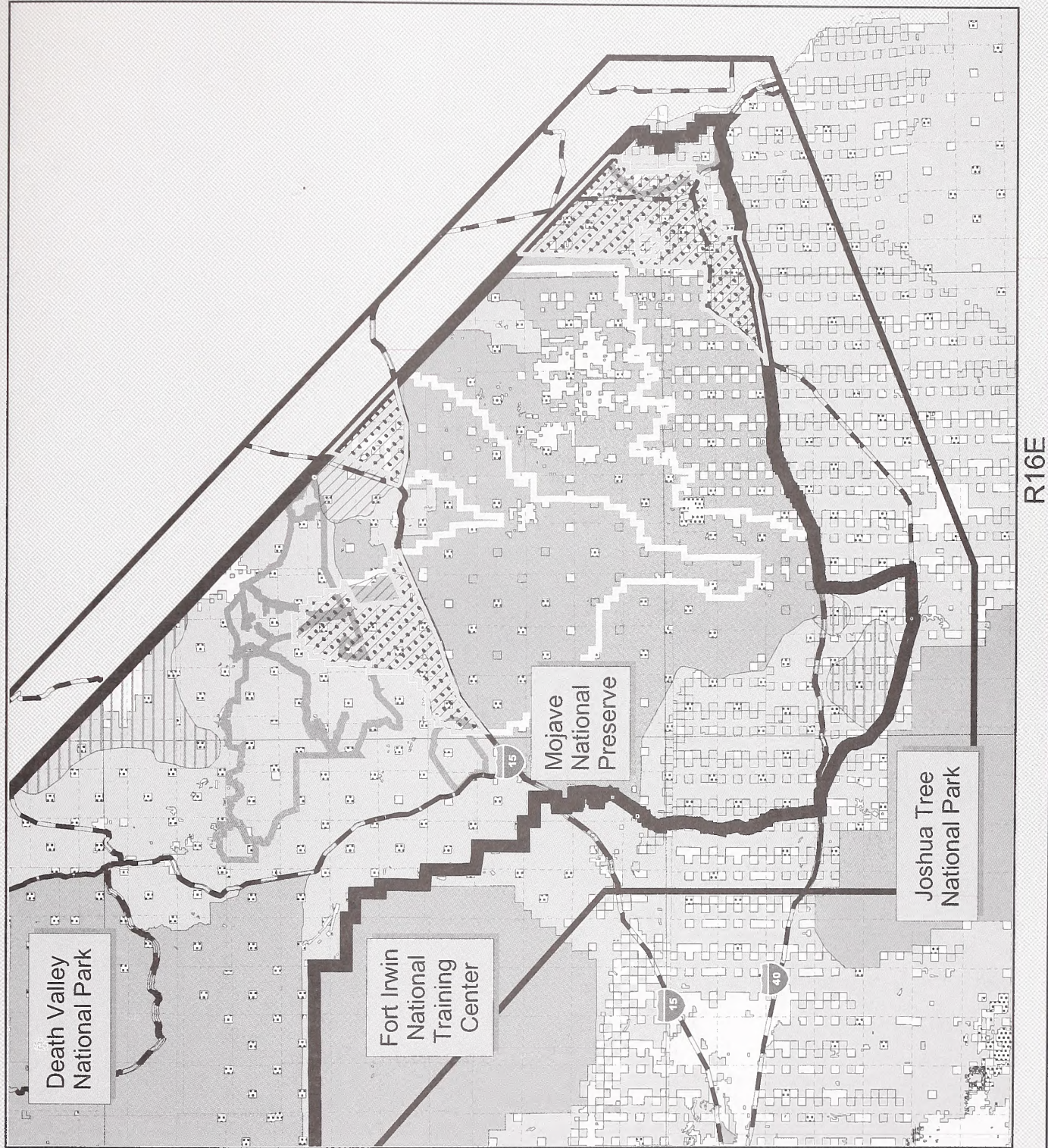




# **Alternative 3: Desert Tortoise Recovery in the Planning Area**

## **Legend**

- Wilderness in DT Cat 1 & 2
- Critical Habitat Boundary
- Alternative 3 ACECs
- Desert Tortoise Cat. 1
- Desert Tortoise Cat. 3
- Private Lands
- State Lands
- BLM Lands
- Other Federal Lands



**Figure 6.c.**









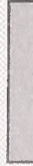


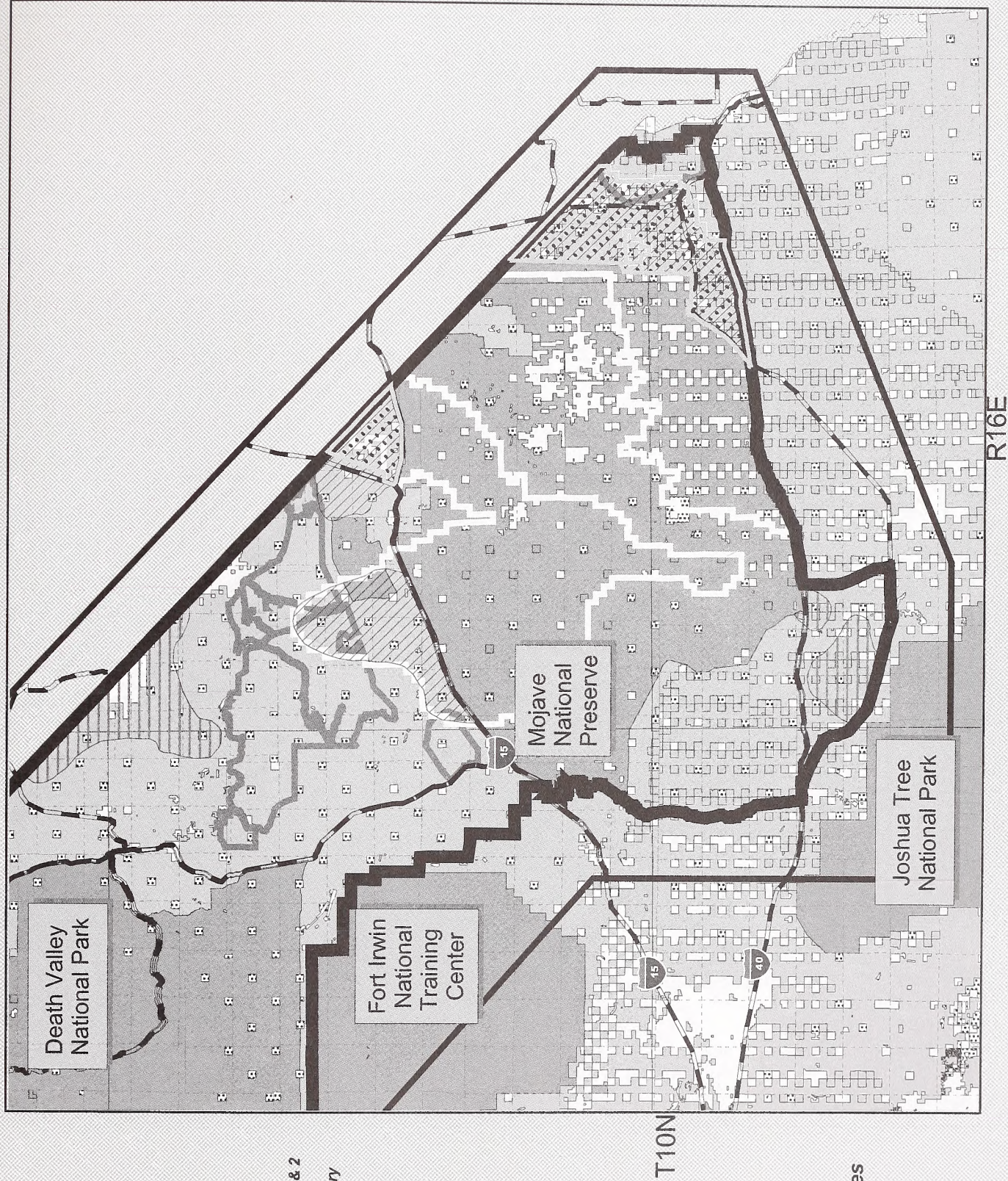




# **Alternative 4: Desert Tortoise Recovery in the Planning Area**

## **Legend**

-  Wilderness in DT Cat 1 & 2
-  Critical Habitat Boundary
-  Alternative 4 ACECs
-  Desert Tortoise Cat. 1
-  Desert Tortoise Cat. 3
-  Private Lands
-  State Lands
-  BLM Lands
-  Other Federal Lands



**Figure 6.d.**





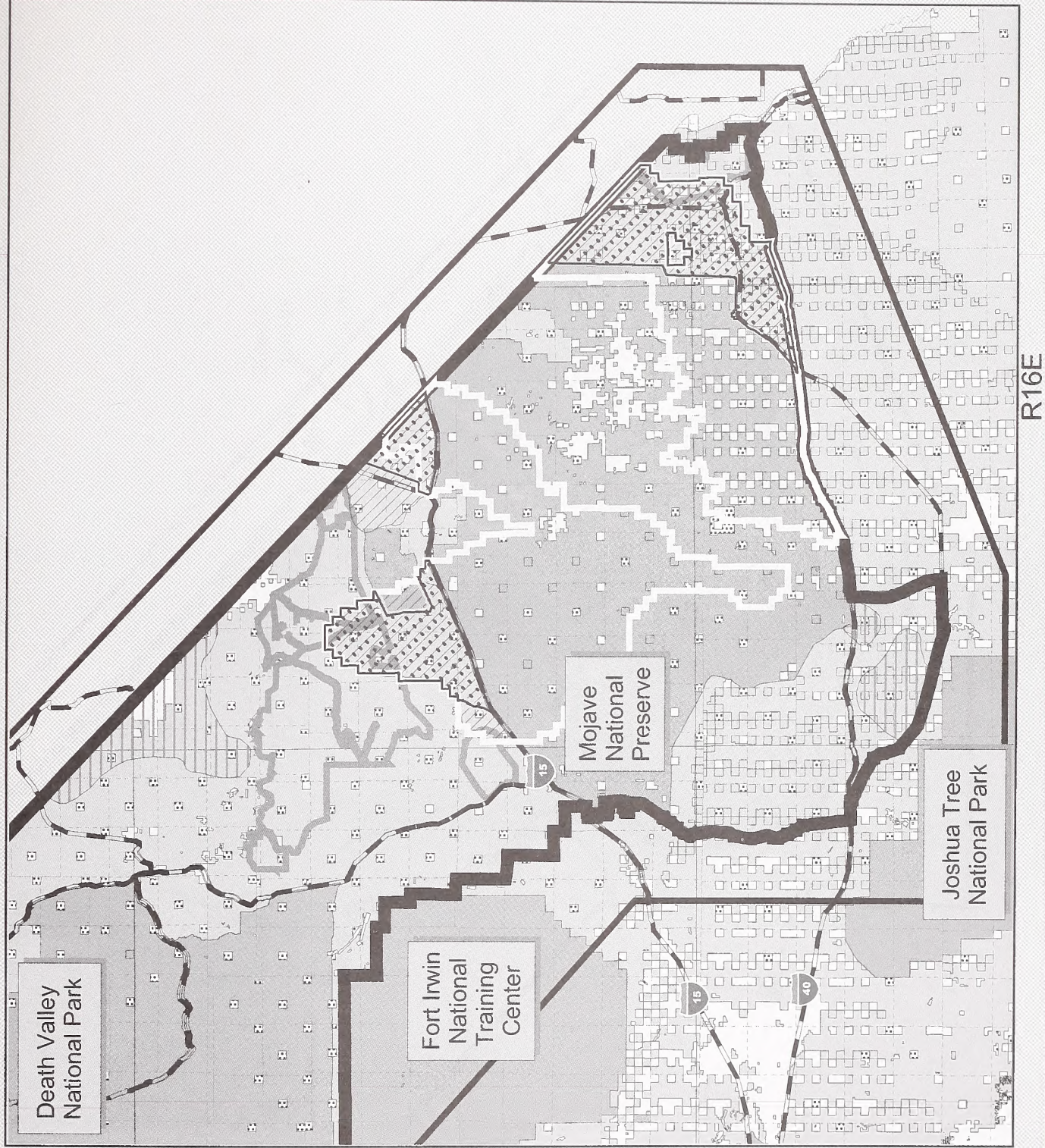


# **Alternative 5: Desert Tortoise Recovery in the Planning Area**

## **Legend**

- Wilderness in DT Cat 1 & 2
- Critical Habitat Boundary
- Alternative 5 ACECs
  - Desert Tortoise Cat. 1
  - Desert Tortoise Cat. 3
- Private Lands
- State Lands
- BLM Lands
- Other Federal Lands

T10N



**Figure 6.e.**












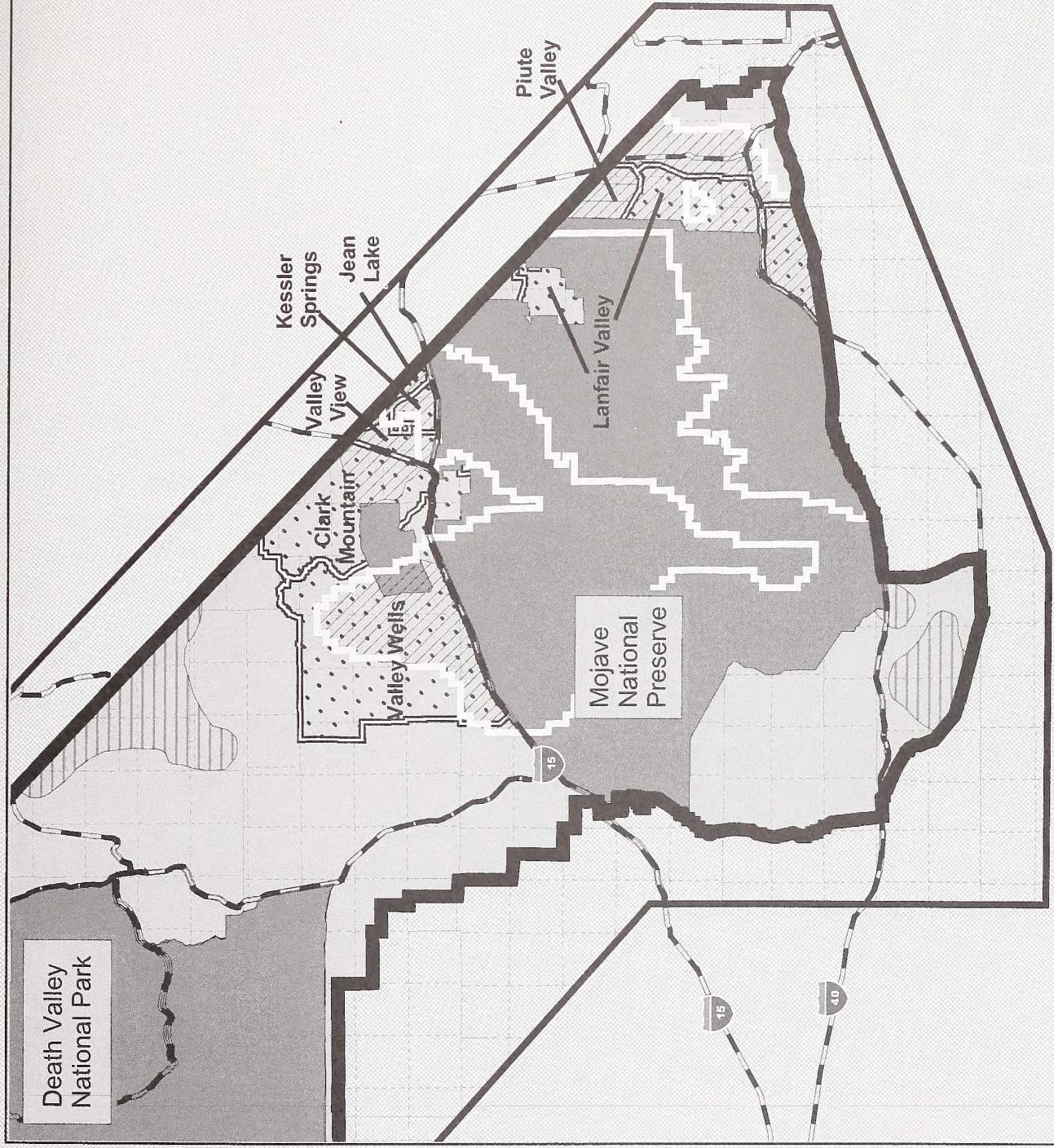
# **Alternatives 1 & 4: Grazing Allotments in Desert Wildlife Management Areas**

## **Legend**

-  Critical Habitat Boundary
-  Desert Tortoise Cat. 1
-  Desert Tortoise Cat. 3
-  Grazing Allotments-  
Ephemeral/Perennial
-  Grazing Allotments-  
Ephemeral only



T10N



**Figure 7.a.**







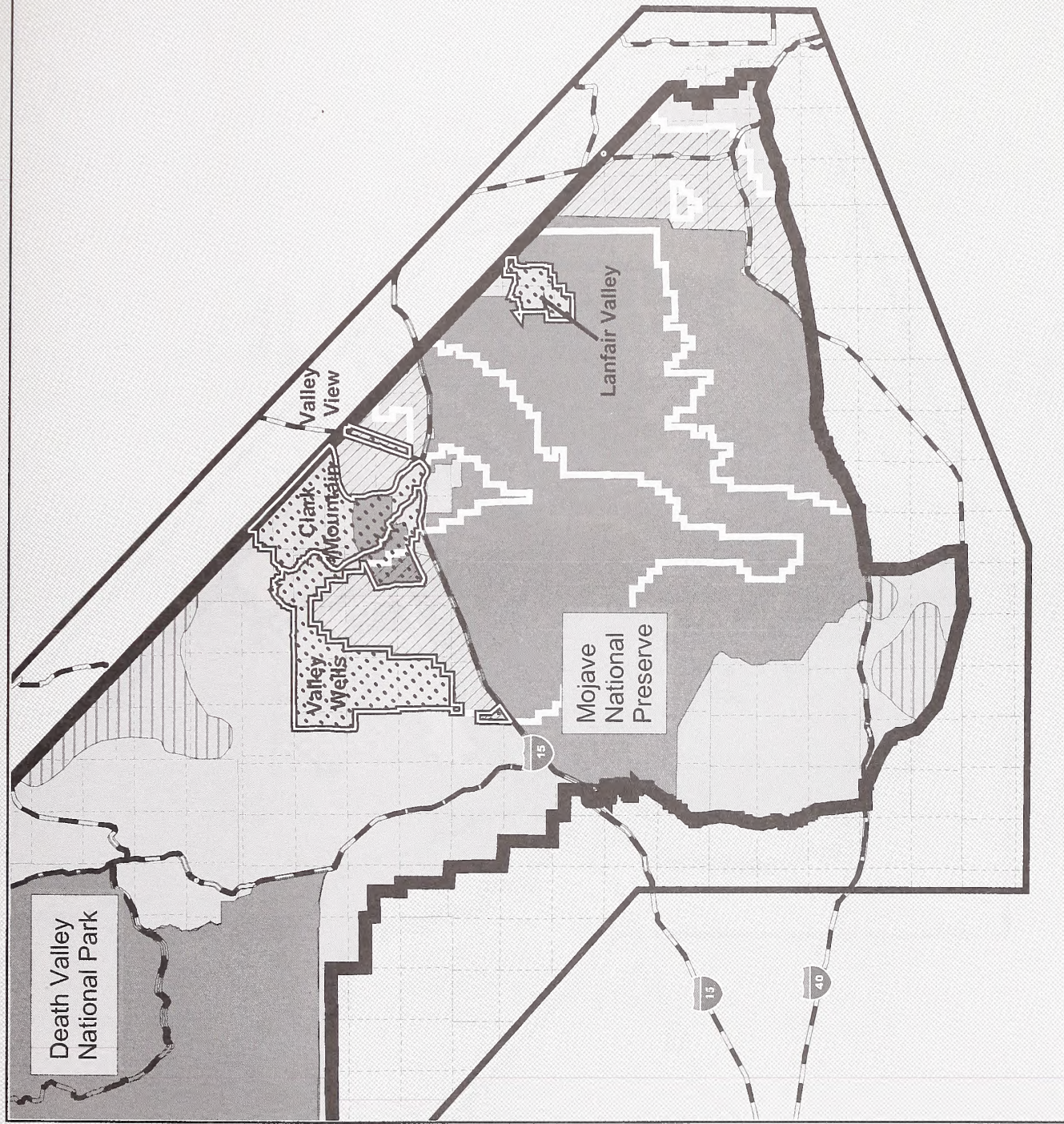




# **Alternative 2: Grazing Allotments in Desert Wildlife Management Areas**

## **Legend**

-  Critical Habitat Boundary
-  Desert Tortoise Cat. 1
-  Desert Tortoise Cat. 3
-  Grazing Allotments-  
Ephemeral/Perennial



**Figure 7.b.**






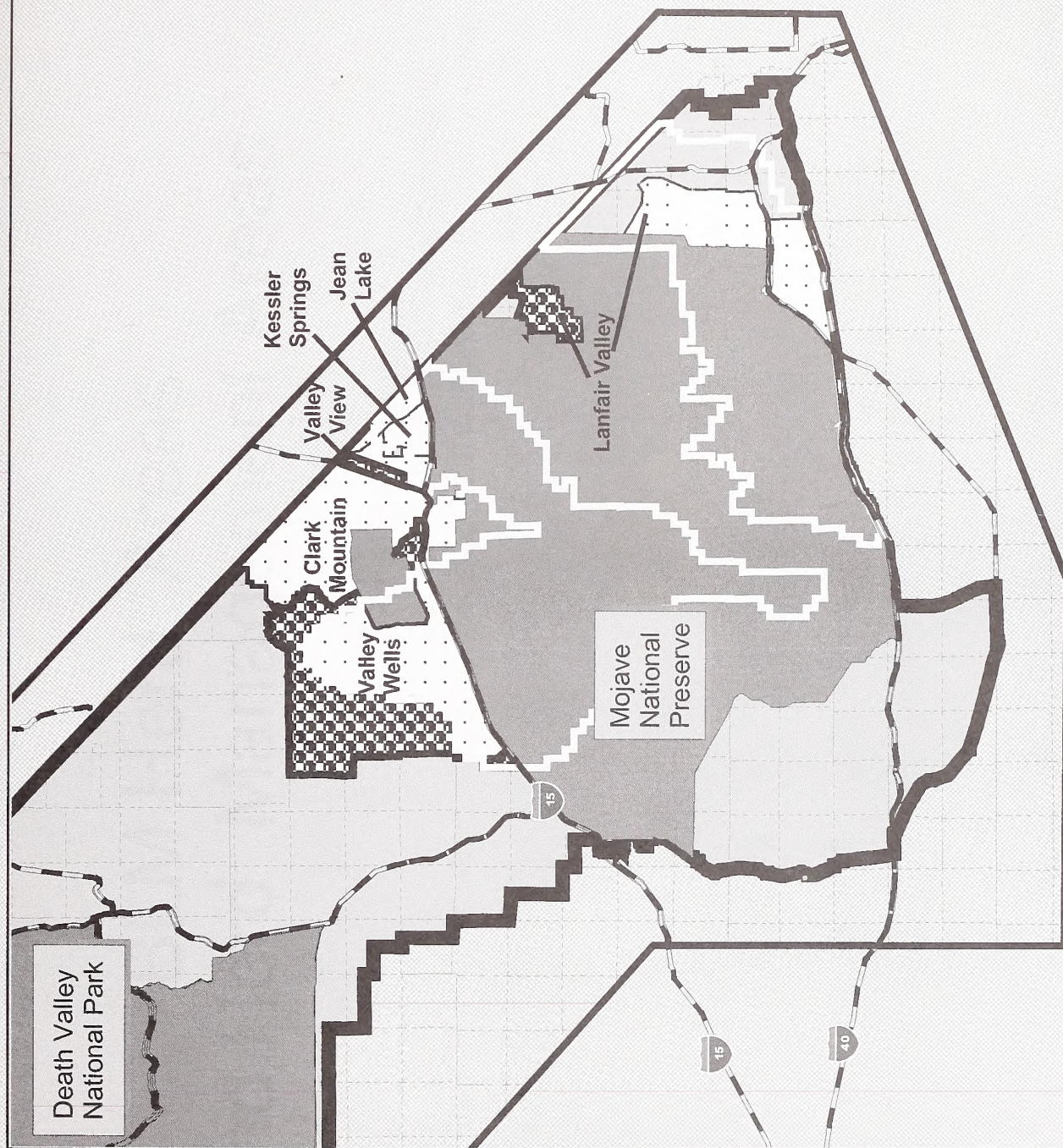




# **Alternatives 3 & 5: Grazing Allotments in Desert Wildlife Management Areas**

## **Legend**

-  Critical Habitat Boundary
-  Grazing Allotments:  
No Seasonal Restrictions
-  Grazing Allotments in DWMAs:  
Seasonal Restrictions



**Figure 7.c.**







# BLM Herd Areas and Herd Management Areas



Figure 8.a.







# BLM Herd Areas and Herd Management Areas

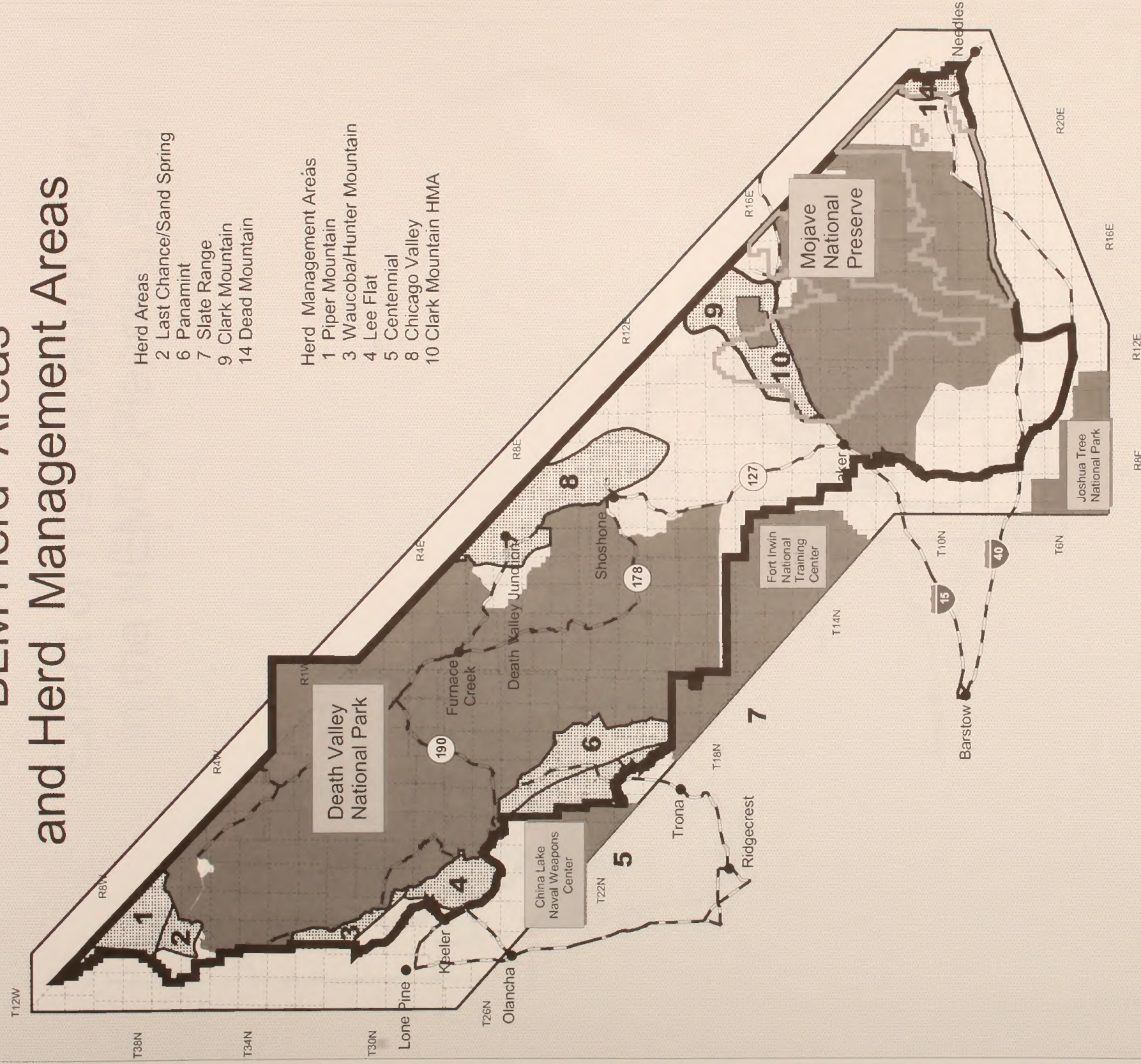


Figure 8.a.







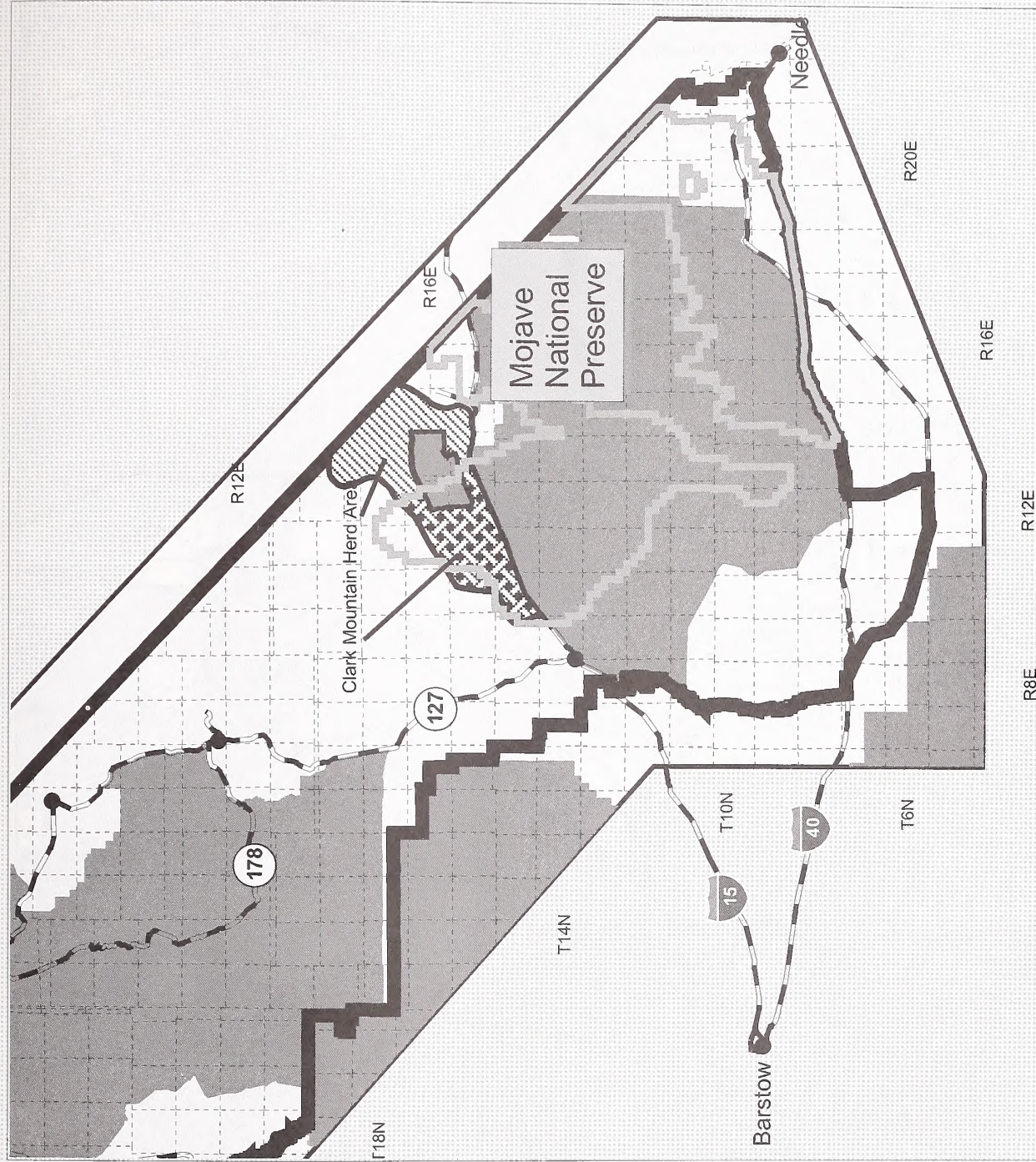




# ***Herd Management Area Alternative for Desert Tortoise Recovery***

## **Legend**

-  Desert Tortoise Critical Habitat
-  Clark Mountain Herd Area
-  Alternative 1 & 4 - Existing HMA
-  Alternative 3 & 5 - Proposed HMA



**Figure 8.c.**

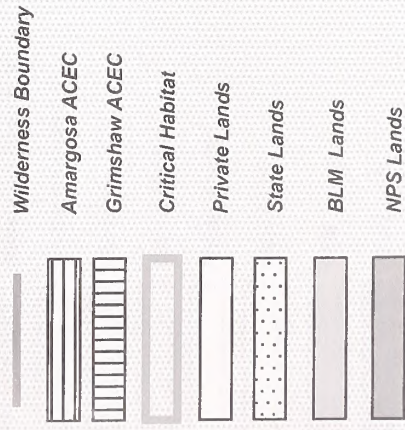






# **Alternative 1: Vole Recovery in the Central Amargosa**

## **Legend**



T20N

R7E

Tecopa

Amargosa River

127

**Figure 9.a.**

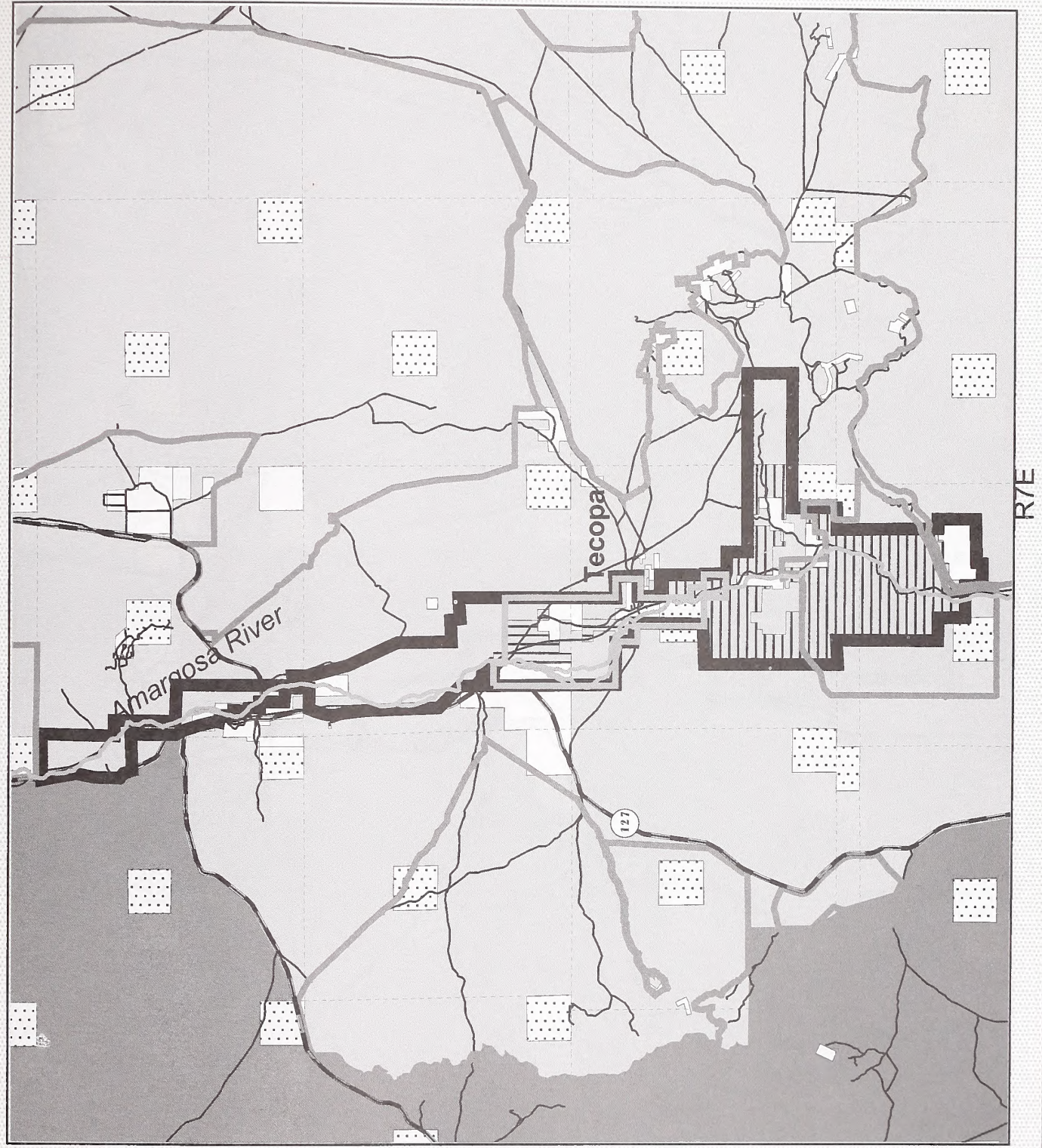
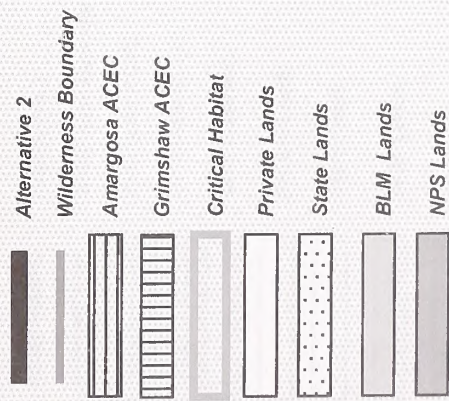






# **Alternative 2: Vole Recovery in the Central Amargosa**

## **Legend**



**Figure 9.b.**

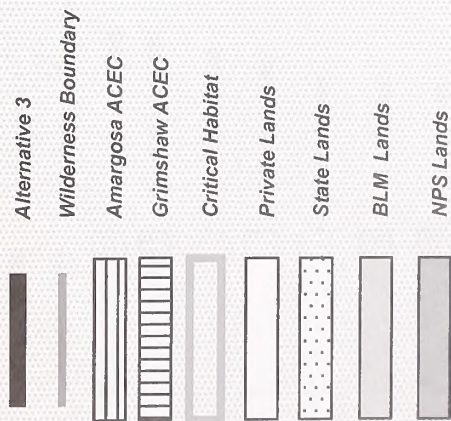






# **Alternative 3: Vole Recovery in the Central Amargosa**

## **Legend**



T20N

R7E

Tecopa

Amargosa River

127

**Figure 9.c.**

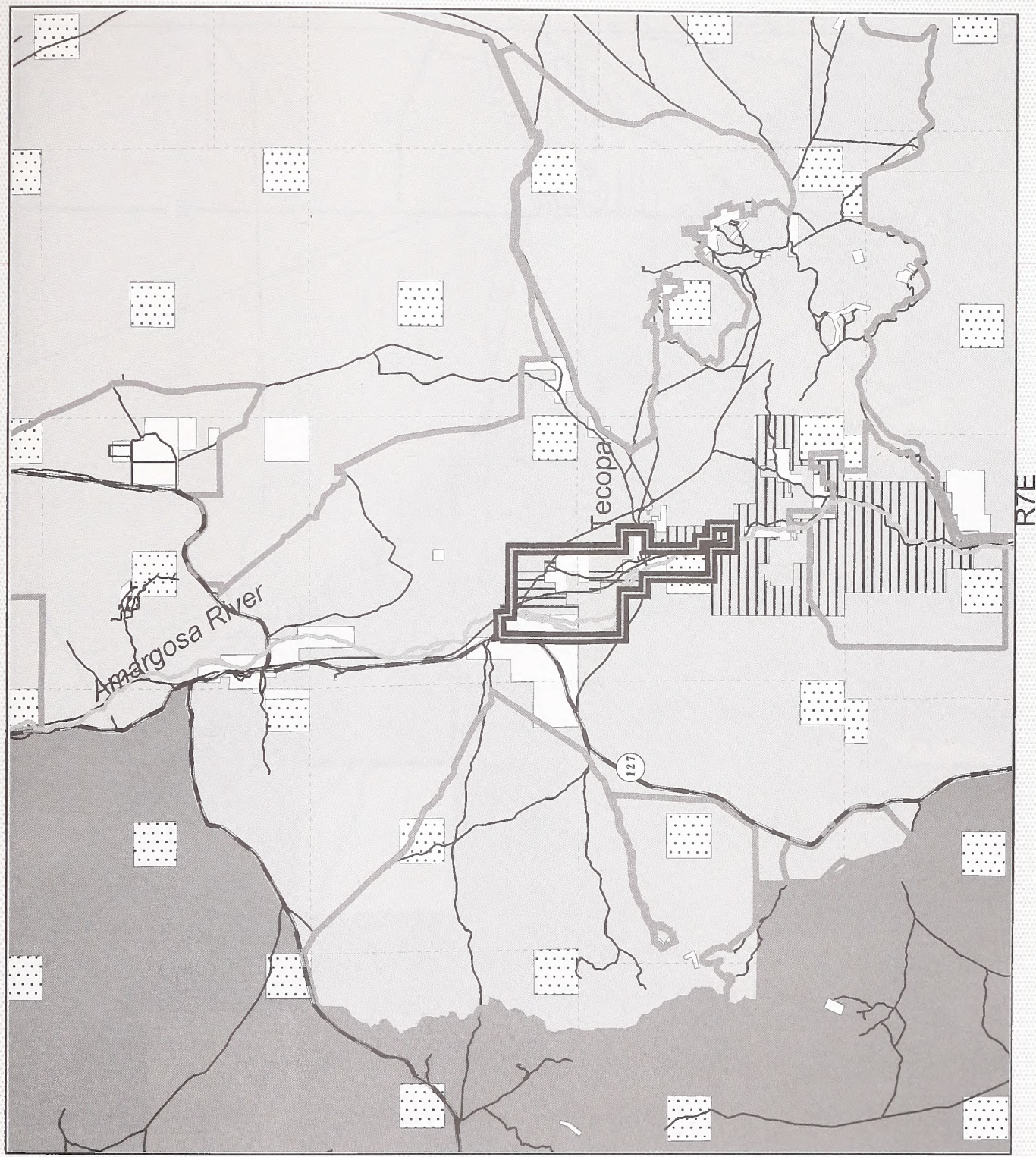
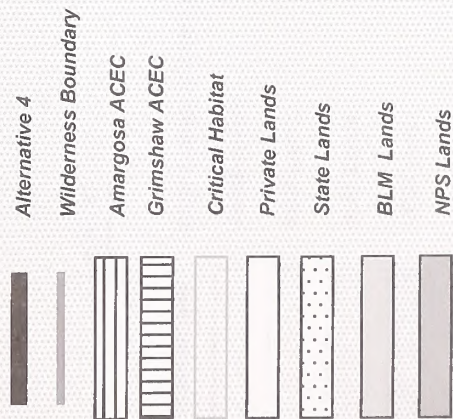






# **Alternative 4: Vole Recovery in the Central Amargosa**

## **Legend**



**Figure 9.d.**

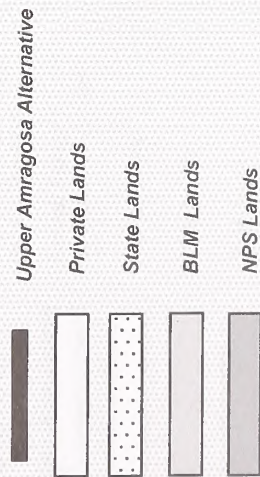




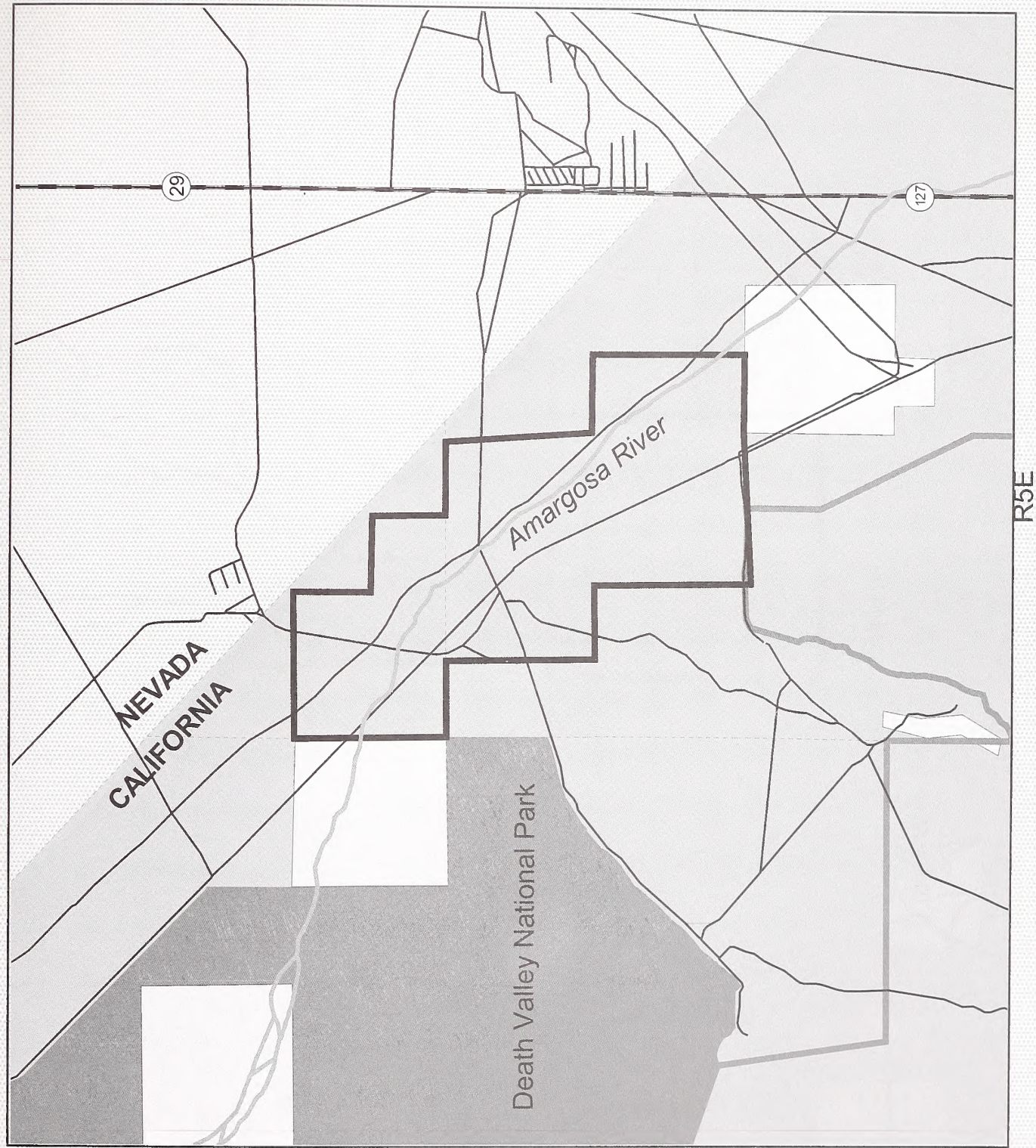


# **Alternatives 2 & 3: Vole Recovery in the Upper Amargosa**

## Legend



**Figure 9.e.**









# **Carson Slough Threatened and Endangered Plant Conservation Alternatives**

## **Legend**

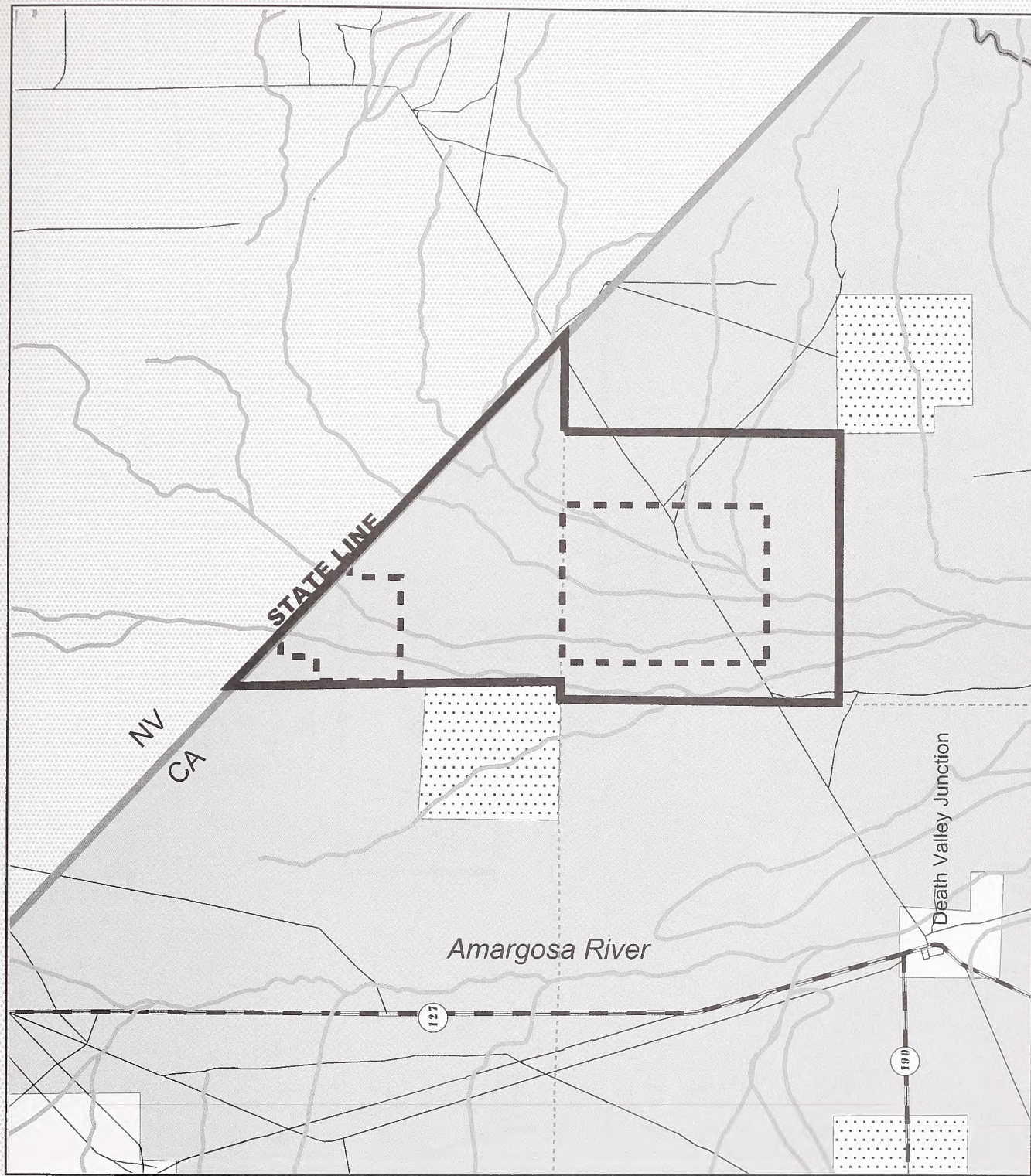
- Intermittent and  
Perennial Waterways
- Carson Slough Critical  
Habitat Proposal
- Carson Slough  
Combined Proposal
- Private Lands
- State Lands
- BLM Lands

T26N

R6E



**Figure 10.**









# **Silurian Hills Bat Conservation Alternatives**

## **Legend**

Silurian Hills Bat Area

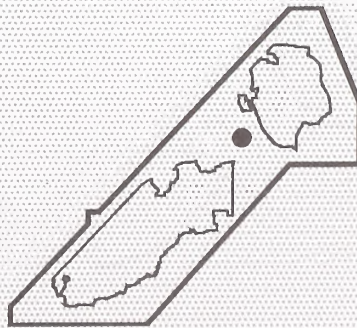
Private Lands

State Lands

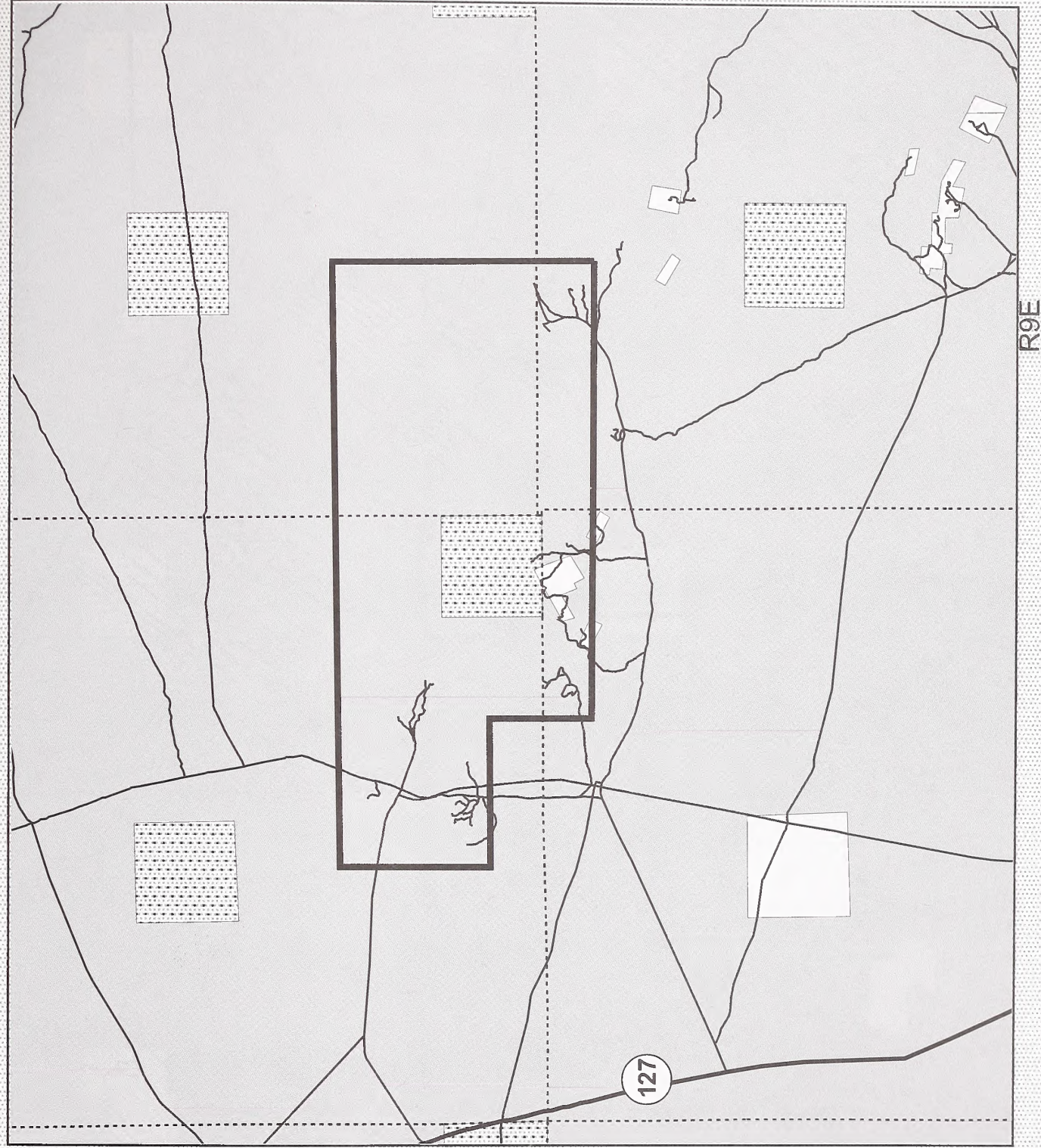
BLM Lands

## **Alternative Strategies**

1. Continue to manage as MUC 'M'
2. Designate Area as Wildlife HMPA
3. Change MUC to 'L'



**Figure 11.**

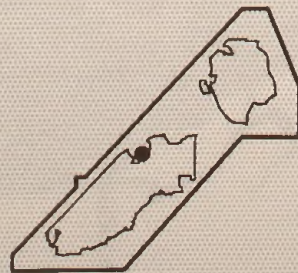




# **Greenwater ACEC Deletion Proposal**

## **Legend**

- Remaining ACEC Boundary
- Old ACEC Boundary
- Private Lands
- State Lands
- NPS Lands
- BLM Lands



**Figure 12.**



# Nemo Proposed Land Tenure



## Legend

- |  |                                     |          |   |
|--|-------------------------------------|----------|---|
|  | Tortoise Conservation Area Boundary | <b>1</b> | North Amargosa disposal, see Figure 13.b.                                       |
|  | Critical Tortoise Habitat Boundary  | <b>2</b> | Shoshone Landfill, see Figure 13.b.   |
|  | BLM Wilderness Boundary             | <b>3</b> | Amargosa River Corridor and Tecopa disposals and acquisitions, see Figure 13.b. |
|  | National Parks                      | <b>4</b> | Mesquite Lake disposal, see Figure 13.c.  |
|  | Proposed Acquisitions               | <b>5</b> | Baker disposal, see Figure 13.d.  |
|  | Proposed Disposals                  |          |   |



Figure 13.a.





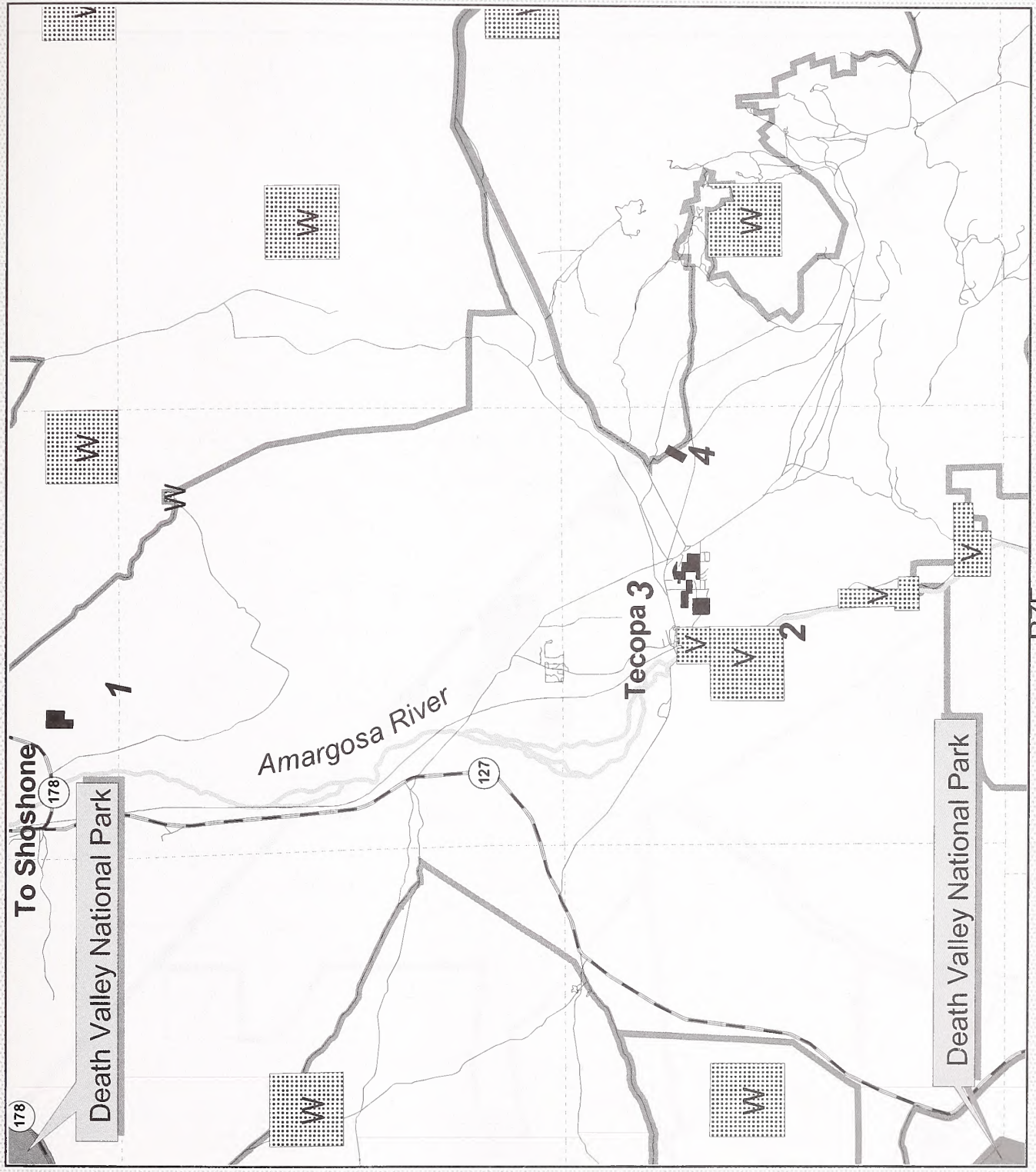


# **NEMO Proposed Land Tenure, Tecopa - Shoshone Area**

## **Legend**

- Wilderness Boundary
- National Parks
- Proposed Wilderness Acquisitions
- Riparian & Vole Habitat Acquisitions
- Proposed Disposals
- 1 Shoshone Landfill disposal
- 2 Amargosa River Corridor acquisitions
- 3 Tecopa disposals
- 4 Tecopa Landfill disposal

T20N



**Figure 13.b.**


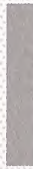








# **NEMO Proposed Land Tenure Mesquite Lake Area**

## **Legend**

-  Wilderness Boundary
-  National Parks
-  Proposed Wilderness Acquisitions
-  Proposed Dispoals

T19.5N

R12E



**Figure 13.c.**







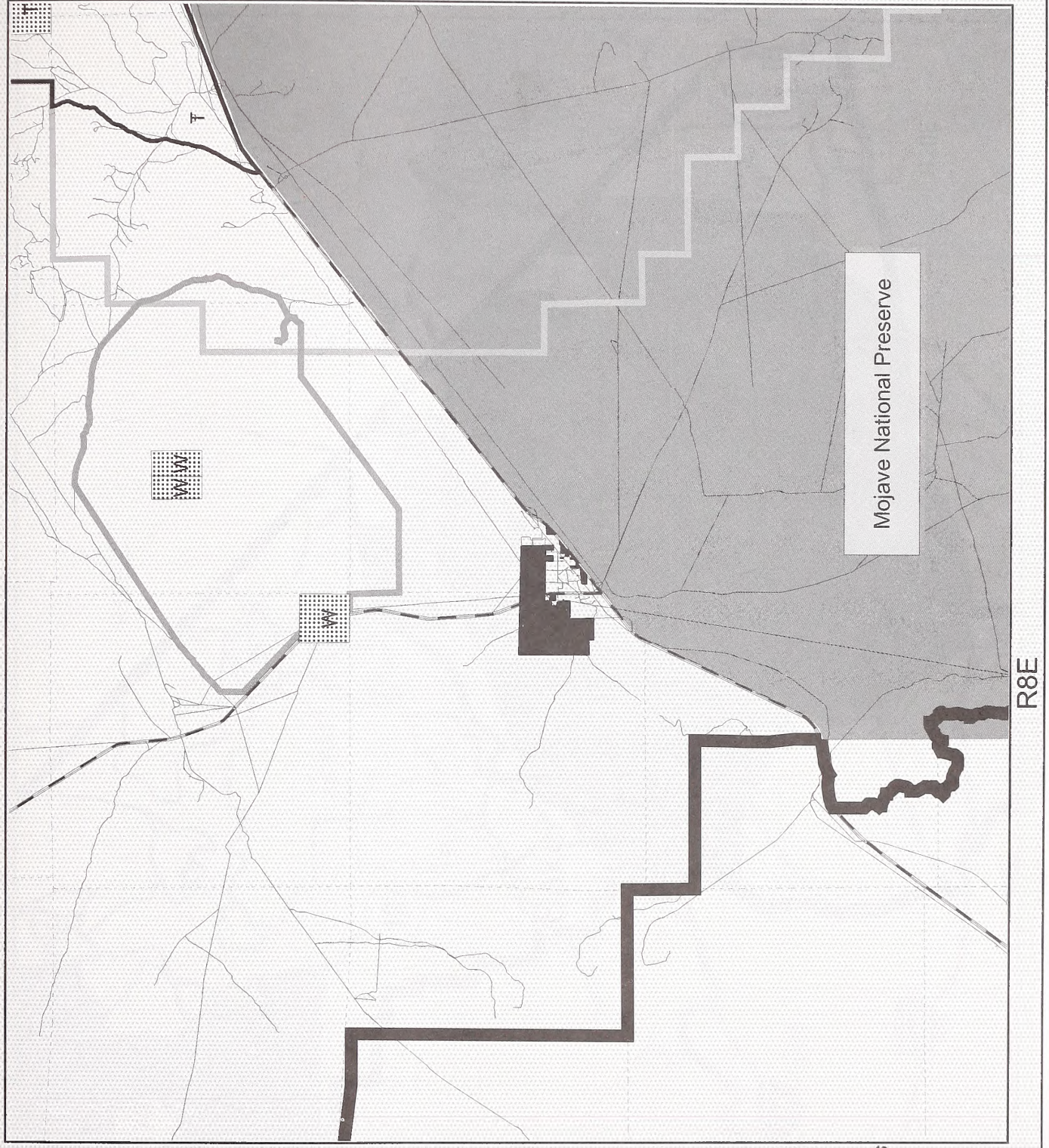


# **NEMO Proposed Land Tenure Baker Area**

## **Legend**

- Wilderness Boundary
- Planning Area Boundary
- National Parks
- Critical Habitat
- Proposed Wilderness acquisitions
- Proposed Desert Tortoise acquisitions
- Proposed Disposals

T14N



**Figure 13.d.**




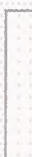
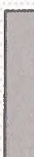


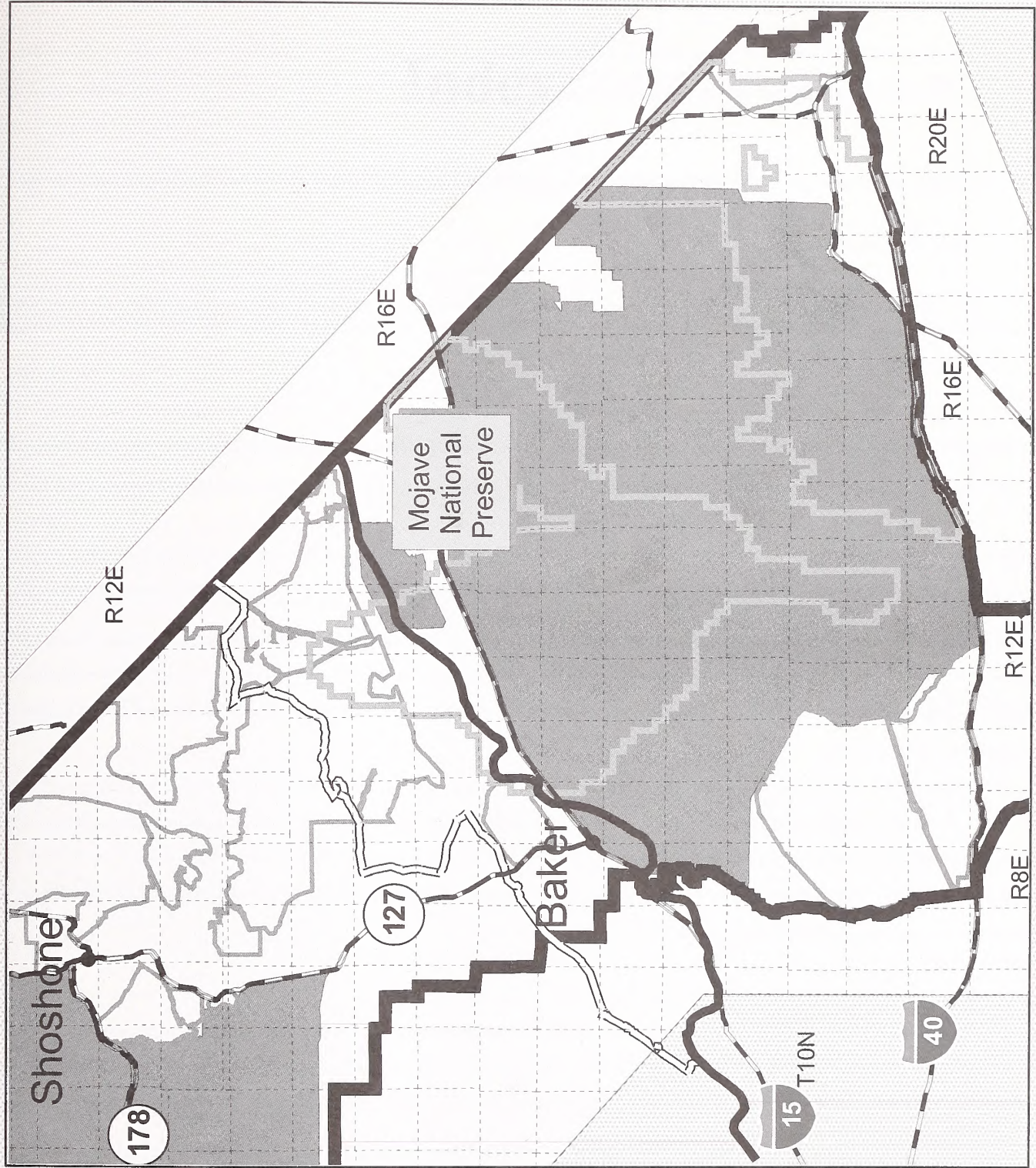




# **NEMO** **Barstow to Vegas** **Race Course** **Alternatives**

## **Legend**

-  1982 Barstow to Vegas Race Course
-  Kingston Wash Race Course Alternative
-  Desert Tortoise Critical Habitat
-  BLM Wilderness
-  National Park Lands



**Figure 14**







# Index



## Chapter 1 Index

### A

Appropriate Management Level, 7  
Area of Critical Environmental Concern, 12

### B

Bureau of Land Management (BLM), 2

### C

Community, 9  
Cover, 4

### D

Density, 7

### E

Endangered Species, 3, 16  
Environmental Impact Statement, 1, 4, 17, 18, 19  
Evaluation, 3, 7, 12

### F

Federal Land Policy and Management Act of 1976, 1  
FLPMA, 1, 16  
Forage, 6  
Fundamentals of Rangeland Health, 5

### H

Habitat, 2, 6, 7, 8, 9, 10, 12, 13, 17, 18  
Herd Management Area, 7

### L

LIMITED AREAS, 11, 12, 14, 16

### M

Mortality, 6, 7, 10  
Multiple-Use, 1, 11, 16



## N

National Environmental Policy Act, 1, 4, 16  
National Historic Preservation Act, 16  
Native Species, 7  
Natural Area, 8

## O

Obligate, 19  
Off-Highway Vehicle, 19  
OHV, 2, 11, 13, 17, 19

## P

Plant Community, 9  
Public Land, 1, 2, 3, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 18, 19

## R

Range Improvement, 7  
Resource Advisory Council, 5  
Riparian, 8, 9, 19

## S

Section, 3  
Species, 2, 3, 6, 7, 8, 9, 10, 13, 16, 18, 19  
Standards of Rangeland Health, 5  
Sustained Yield, 1, 2

## T

Threatened Species, 6

## W

Wild and Scenic Rivers, 3, 8, 15, 19  
Wilderness Study Areas, 11



## Chapter 2 Index

### A

Allotment, 10, 18, 21, 23, 25, 29, 31, 32, 88, 101  
Amargosa Vole Conservation and Recovery, 40, 41, 90  
Amendment 2, 28  
Appropriate Management Level, 23, 46, 48  
Aquifer, 43, 46, 48

### B

Bat Conservation in the Silurian Hills, 53, 95  
Biomass, 85, 87

### C

Carrying Capacity, 23, 30  
Catastrophic Event, 7, 12  
CLOSED AREAS, 29, 69  
Community, 7, 56, 80, 81  
Concentration Area, 21, 23  
Cover, 5, 6, 7, 12, 20, 22, 25, 28, 85, 87, 91, 98, 99, 100  
Cultural Resources, 72, 95, 97  
Cultural Site, 55

### D

Density, 99  
Diversity, 6, 9, 12, 85, 87, 99

### E

Ecosystem, 4, 34, 85  
Endangered Species, 9, 35, 36, 40, 41, 55  
Environmental Impact Statement, 32, 82  
Ephemeral forage, 23, 29, 31  
Ephemeral range, 9  
Erosion, 6, 8, 12, 75, 78, 85, 88, 91, 93, 100, 104  
Evaluation, 9, 17, 63

### F

Forage, 9, 10, 16, 19, 23, 24, 32, 85, 86, 87, 88, 99  
Forage Utilization, 9  
Forb, 98  
Fundamentals of Rangeland Health, 2

### G

Grass, 10  
Greenwater Canyon ACEC Deletion, 61, 97



## H

Habitat, 1, 15, 16, 17, 18, 19, 20, 22, 24, 26, 28, 29, 30, 32, 34, 35, 36, 38, 39, 40, 41, 43, 45, 46, 47, 48, 51, 52, 53, 56, 62, 64, 65, 66, 71, 83, 84, 87, 88, 90, 91, 92, 93, 95, 98, 99  
Habitat Management Plan, 16, 51, 53  
Herd Management Area, 19, 21, 43  
Herd Management Area Plan, 43  
HMP, 17, 19, 38, 40, 51, 53, 90, 95, 96

## K

Key Forage Species, 19, 24  
Key Species, 10

## L

LIMITED AREAS, 18, 35, 41, 43, 48, 51, 52, 53, 54, 55, 59, 61, 66, 69, 75, 76, 77, 78, 80, 81

## M

Mineral Entry, 83  
Mitigation, 4, 8, 16, 17, 18, 20, 22, 51, 53, 70, 87, 94, 95, 96, 97, 99, 104  
Mortality, 7, 12, 22, 87, 99  
Multiple-Use, 18, 29, 34, 54, 84

## N

National Environmental Policy Act, 4, 54  
National Register of Historic Places, 64, 66, 100  
Native Species, 4, 5, 6, 7, 9, 12, 93  
Natural Area, 37, 41, 72  
Nutrient Cycle, 5, 7, 12

## O

Objective, 10, 71  
Off-Highway Vehicle, 8, 74, 98  
OHV, 62, 64, 66, 73, 100, 101  
OPEN AREAS, 29, 64, 65, 66, 69, 75, 76, 77, 78, 98

## P

Perennial Stream, 9  
Permeability Rate, 4, 5, 6, 12  
Plant Community, 7, 12, 56  
Primitive, 72  
Public Land, 1, 2, 3, 4, 6, 12, 15, 16, 17, 19, 20, 21, 22, 25, 34, 35, 38, 40, 41, 43, 45, 48, 51, 52, 53, 54, 55, 59, 61, 70, 72, 73, 80, 81, 82, 83, 84, 85, 86, 90, 91, 92, 93, 94, 95

## R

Range Condition, 24  
Range Improvement, 3, 8, 24, 32, 85, 86  
Raptor, 56  
Recruitment, 7, 12, 87  
Resource Advisory Council, 2, 83



Riparian, 7, 9, 12, 34, 35, 36, 38, 40, 41, 45, 46, 48, 56, 57, 64, 66, 85, 90, 92, 93, 94, 99, 101

## S

Section, 62, 63, 64, 65, 66, 75, 78

Sediment, 5, 7, 12

Seeps, 6, 8, 75, 78

Soil Compaction, 88

Soils, 4, 5, 6, 7, 12, 94, 100, 104

Species, 1, 2, 4, 5, 6, 7, 8, 9, 10, 12, 17, 19, 24, 34, 35, 36, 37, 41, 43, 45, 46, 48, 51, 52, 53, 55, 56, 63, 65, 72, 84, 85, 87, 90, 93, 95, 98, 99

Standards and Guidelines, 2, 12, 23, 29, 85, 93, 98

Standards of Rangeland Health, 2, 4

## T

Terms and Conditions, 3, 17, 18, 21, 23, 25, 26, 29, 30, 45, 48

Threatened Species, 72

## U

Utilization, 9, 10, 19, 24

## V

Viable populations, 16, 36, 39, 41

Vigor, 6, 7, 12, 85, 87

## W

Wetlands, 34, 35, 41, 45, 46, 48

Wild and Scenic Rivers, 1, 34, 82

Wild Horses and Burros, 43, 46, 48, 86

Wilderness Study Areas, 54, 72, 84

Wildlife, 7, 12, 17, 19, 20, 22, 24, 25, 26, 32, 34, 35, 36, 41, 51, 53, 56, 63, 72, 73, 83, 85, 87, 90, 95, 99, 104



## Chapter 3 Index

### A

Allotment, 19, 20, 21, 22, 23, 24, 25, 26, 43, 48, 51, 53  
Allotment Management Plan, 21  
Alluvial Fan, 35, 66  
Animal Unit, 20  
Appropriate Management Level, 50  
Aquifer, 16  
AUM, 20, 23, 43

### C

Campsite, 56  
Candidate Species, 64  
Carrying Capacity, 19, 22  
Category 2, 66  
Category 3, 66  
Cave, 8  
Clay, 58  
CLOSED AREAS, 32  
Community, 3, 5, 11, 36, 61, 63, 68  
Concentration Area, 9, 48, 50  
Contrast, 20  
Cover, 2, 3, 5, 7, 20, 64, 66  
Cultural Resources, 42, 56, 61, 62, 67, 70

### D

Density, 69  
Diversity, 6, 63

### E

Endangered Species, 10, 11, 12, 14  
Environmental Assessment, 64, 65, 66, 67, 68  
Environmental Impact Statement, 8, 42  
Ephemeral forage, 20, 24  
Erosion, 4, 5, 15, 64, 66  
Evaluation, 25, 51

### F

Federal Land, 41, 49  
FLPMA, 36  
Forage, 4, 11, 20, 22, 23, 24, 26, 43, 51, 53

### G

Grass, 6, 18, 41, 45, 52, 63  
Ground Water, 4, 15, 16, 58, 59



## H

Habitat, 1, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 19, 21, 22, 23, 24, 27, 28, 30, 31, 34, 42, 45, 47, 49, 50, 52, 53, 54, 56, 58, 61, 62, 63, 64, 65, 66, 70  
Heavy Use, 19  
Herd Area, 43, 48  
Herd Management Area, 19, 48, 50, 52  
Herd Management Area Plan, 48  
HMP, 49, 54, 59

## K

Key Forage Species, 51

## L

LIMITED AREAS, 41, 49, 52, 69  
Lithic, 18, 43, 46, 47, 56  
Lithic Scatter, 46, 56

## M

Metallic Minerals, 60  
Mineral Entry, 35  
Mitigation, 22, 24, 28, 70  
Mortality, 13

## N

National Historic Preservation Act, 67  
National Register of Historic Places, 18, 46, 61, 62  
Native Species, 51  
Natural Area, 53, 57

## O

Obligate, 8, 54, 55  
Off-Highway Vehicle, 13, 68  
OHV, 15, 27, 28, 30, 33, 52, 62, 67, 69  
OPEN AREAS, 32, 33, 62, 63, 67

## P

Permittee, 43  
Petroglyph, 43, 60  
Plant Community, 61, 63  
Playa, 58, 59  
Predator, 12  
Public Land, 1, 3, 7, 9, 19, 24, 26, 27, 30, 31, 33, 35, 36, 41, 42, 43, 44, 46, 47, 48, 49, 50, 52, 53, 54, 56, 57, 61, 63, 67, 68, 70

## R

Range Condition, 41, 51  
Range Improvement, 24  
Range Management, 20



Raptor, 61  
Reach, 15, 16, 55  
Recruitment, 13  
Riparian, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 21, 24, 30, 53, 54, 56, 59, 61, 62, 63  
Riparian Zone, 11  
Rock Art, 43, 47  
Rock Shelter, 47  
Runoff, 16, 55  
Rural, 10, 44, 52

## S

Section, 1, 41  
Sediment, 5  
Seeps, 4, 14, 15  
Soils, 3, 4, 5, 15, 66, 68  
Special Status Species, 8, 45, 47, 49, 52  
Species, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 19, 23, 24, 30, 42, 45, 49, 51, 52, 54, 58, 59, 61, 62, 63, 64, 65  
Sustained Yield, 48

## T

Threatened Species, 10, 13

## U

Upland, 4, 10, 11, 12, 24, 33  
Utilization, 21, 23, 24, 51

## V

Vigor, 64

## W

Wetlands, 12  
Wild and Scenic Rivers, 16, 30, 70  
Wild Horses and Burros, 19, 20  
Wilderness Study Areas, 26  
Wildlife, 1, 4, 6, 8, 21, 24, 27, 30, 31, 61, 62, 65, 70



## Chapter 4 Index

### A

Allotment, 9, 10, 12, 20, 26, 28, 30, 31, 33, 74, 81  
Alluvial Fan, 100  
Ambient Air Quality, 102  
Animal Unit Month, 9  
Appropriate Management Level, 9, 52, 102

### B

Biomass, 3, 16, 22, 29

### C

Campsite, 44  
Carrying Capacity, 9  
Cave, 38  
CLOSED AREAS, 28, 89, 91  
Community, 4, 12, 23, 68, 110  
Contrast, 73, 103  
Cover, 3, 5, 7, 16, 17, 36, 40, 41, 43, 47, 51, 53, 67, 69, 70, 72, 78, 86, 100  
Cultural Resources, 7, 8, 19, 25, 30, 32, 35, 39, 43, 44, 47, 49, 58, 59, 60, 62, 64, 66, 74, 84, 87, 103, 108  
Cultural Site, 83

### D

Density, 11, 14, 22, 28, 68, 70, 73, 80, 81, 86, 87  
Diversity, 3, 4, 5, 6, 8, 16, 17, 19, 20, 36, 37, 51, 86, 97

### E

Economic Impact, 107  
Ecosystem, 7, 10, 11, 14, 53, 97  
Endangered Species, 40, 43, 52, 109, 110  
Environmental Consequence, 1  
Environmental Impact Statement, 61, 96  
Ephemeral forage, 21  
Erosion, 4, 7, 24, 29, 32, 34, 38, 52, 54, 72, 73, 78, 83, 85, 87, 93, 97, 99, 100  
Evaluation, 39  
Exotic Species, 97

### F

Forage, 3, 8, 12, 19, 21, 23, 24, 25, 26, 29, 30, 33, 37, 52, 69, 70, 86, 99, 104, 105, 107  
Forb, 68

### G

Grass, 98, 99



## H

Habitat, 2, 4, 6, 16, 17, 18, 19, 20, 21, 22, 23, 29, 30, 31, 33, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 59, 60, 68, 69, 70, 71, 72, 74, 76, 77, 78, 80, 81, 82, 83, 86, 87, 89, 91, 96, 97, 98, 99, 100, 101, 102, 104, 106, 109  
Habitat Management Plan, 46  
Heavy Use, 103  
Herbaceous, 5  
Herd Area, 20  
Herd Management Area, 23, 40, 96, 100  
HMP, 38, 59, 60, 61

## K

Key Forage Species, 19

## L

Landfills, 93, 94  
Late Seral, 23  
LIMITED AREAS, 31, 60, 61, 63, 64, 66, 89, 91, 94  
Locatable Minerals, 106

## M

Mitigation, 8, 10, 22, 27, 28, 32, 33, 44, 45, 47, 49, 50, 53, 58, 59, 60, 61, 62, 66, 69, 70, 83, 95, 98, 103, 108  
Mortality, 23, 24, 78, 99  
Multiple-Use, 100, 110

## N

National Ambient Air Quality Standards, 102  
National Historic Preservation Act, 8  
National Register of Historic Places, 8, 80, 83, 108  
Native Species, 3, 7, 10, 14, 39, 52, 89, 91, 96, 98, 100  
Natural Area, 21

## O

Obligate, 1, 37  
Off-Highway Vehicle, 1, 85  
OHV, 1, 11, 14, 22, 36, 51, 71, 74, 78, 79, 81, 87, 99, 110  
OPEN AREAS, 31, 77, 79, 85  
Overgrazing, 5

## P

Plant Community, 4  
Playa, 51, 53  
Predator, 18  
Public Land, 1, 2, 3, 6, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 24, 25, 36, 37, 38, 39, 41, 42, 43, 44, 45, 47, 48, 49, 50, 51, 53, 54, 55, 56, 57, 58, 60, 61, 63, 64, 86, 88, 90, 92, 97, 100, 101, 103, 104, 106, 107, 109, 110

## R

Range Improvement, 3, 6, 9, 10, 11, 19, 21, 104, 109



Recruitment, 24

Riparian, 1, 3, 4, 5, 6, 7, 9, 10, 12, 14, 17, 36, 37, 38, 39, 41, 42, 43, 45, 48, 50, 51, 52, 53, 54, 55, 56, 57, 61, 63, 69, 80, 83, 84, 98, 100, 101, 102, 107

Riparian Zone, 5, 45

Runoff, 6, 69

Rural, 99

## S

Season of Use, 16

Section, 1, 2, 38, 40, 53, 55, 68, 75, 76, 77, 79, 84, 105, 109

Sediment, 45

Seeps, 7, 89, 91

Seral Stage, 4, 6, 23

Soil Compaction, 24, 29, 32, 97, 99

Soils, 4, 6, 7, 10, 11, 17, 36, 51, 53, 68, 72, 80, 83, 86, 87, 89, 91, 93, 97, 99, 102

Special Status Species, 12

Species, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 14, 17, 18, 19, 21, 23, 24, 27, 32, 36, 37, 38, 39, 40, 41, 42, 43, 48, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 67, 68, 69, 70, 72, 77, 78, 81, 82, 83, 86, 89, 91, 97, 98, 99, 100, 101, 109, 110

Standards and Guidelines, 3, 12

State Land, 106

## T

Terms and Conditions, 93

## U

Upland, 17

Utilization, 19, 97

## V

Vigor, 3, 22, 29

## W

Wetlands, 12, 37, 51, 52

Wild and Scenic Rivers, 1, 39, 43, 47, 49, 110

Wild Horses and Burros, 8, 9, 20, 35, 40, 52, 103

Wilderness Study Areas, 100, 103

Wildlife, 9, 11, 13, 14, 17, 21, 23, 34, 37, 41, 46, 48, 51, 52, 58, 59, 62, 63, 65, 69, 70, 78, 80, 86, 87, 89, 91, 93, 98, 99, 100, 101, 108, 109





UNITED STATES DEPARTMENT OF INTERIOR  
BUREAU OF LAND MANAGEMENT  
CALIFORNIA DESERT DISTRICT



## ***DRAFT ENVIRONMENTAL IMPACT STATEMENT***

# **APPENDICIES**



**JANUARY 2001**







**Appendix A: Proposed Desert Tortoise Conservation Strategy****Appendix B: NEMO Implementation Strategy****Appendix C: Description and Strategy for Addressing Desert Tortoise Issues****Appendix D: Desert Tortoise Monitoring****Appendix E: Cattle Grazing Use Guidelines in NEMO Desert Tortoise Habitat****Appendix F: Mechanism to Track Surface Disturbance and Habitat Restoration****Appendix G: Recommended Special Management Actions for the Recovery of T&E Plants****Appendix H: Recommended Special Management Actions for the Recovery of the Vole****Appendix I: Species of Special Consideration in NEMO****Appendix J: Upland Public Lands Assessment Criteria / Proper Functioning Condition****Appendix k: Current Management Situation****Appendix L: Planning Criteria for the NEMO Planning Effort****Appendix M: Summary of CDCA Plan Maintenance Actions Resulting From the CDPA****Appendix N: Land Tenure Strategy****Appendix O: Wild and Scenic River Eligibility Study for the Amargosa River****Appendix P: Development of Standards for Public Land Health and Grazing Management Guidelines****Appendix Q: Route Designation****Appendix R: List of G-E-M Resource Areas****Appendix S: Wild and Scenic River Eligibility Study for Cottonwood Creek****Appendix T: Wild and Scenic River Eligibility Study for Surprise Canyon**







## Appendix A

### PROPOSED NEMO DESERT TORTOISE CONSERVATION STRATEGY

The following Desert Tortoise Conservation Strategy is based on recommendations of a NEMO Desert Tortoise Biological Team.<sup>1</sup> The recommendations were submitted in October 1998. The Team adopted the following goal and objectives as set forth in the Recovery Plan.

**GOAL:** To meet the recovery criteria for the Desert Tortoise as specified in the Desert Tortoise Recovery Plan (pp. 43-45). A population of Desert Tortoise within a recovery unit may be considered for delisting when all of the following criteria are met

1. Upward or stationary trend in population for at least 25 years;
2. Sufficient habitat<sup>2</sup> must be managed intensely to ensure long-term tortoise-population viability {at least 1 area of 1000 square miles (640,000 acres) in the recovery unit};
3. Population lambda is at least 1.0<sup>3</sup>;
4. Land management commitment sufficient to ensure long-term protection of tortoise populations and its habitat;
5. Management is sufficient without the use of regulatory mechanisms (e.g., formal consultations with U.S. Fish and Wildlife Service) in the Endangered Species Act.

**OBJECTIVES:** The following objectives are based on the recovery actions specified in the Desert Tortoise Recovery Plan (pp. 45-54):

1. Establish areas where viable Desert Tortoise populations are maintained;
2. Develop and implement management prescriptions for these areas to address threats sufficient to accomplish the goal;
3. Acquire sufficient habitat in these areas to ensure that management strategies are effective;
4. Monitor tortoise populations to assess effectiveness of management prescriptions in meeting recovery goals in these areas;
5. Establish an environmental education program to facilitate understanding of desert tortoise threats and recovery needs, and affect compliance with management strategies in these areas; and
6. Continue research necessary to assess relative importance of threats to the desert tortoise in these areas and to evaluate and improve mechanisms to address these threats.

---

<sup>1</sup>NEMO DT biological team: Larry Foreman - BLM (team lead), Ray Bransfield/George Walker - FWS, Carol Crosby - FWS, Mark Depoy - BLM-BFO, Frank Hoover/Becky Jones - CDFG, Mike McGill/Willow Yumiko - BLM-NFO, Tom Egan - BLM-BFO, Joyce Schlachter - BLM-RFO, Edy Seehafer - BLM-BFO.

<sup>2</sup>Habitat must also be of sufficient quality (Desert Tortoise Recovery Plan, USFWS, June 1994, pp. 48-49).

<sup>3</sup>Minimum population density potential for adults is believed to be 10/square mile to assure reproductive success (Ibid, in App. C, Section 5, and summarized on p. C53).



## **A.1 OBJECTIVE 1: ESTABLISH AREAS WHERE VIABLE DESERT TORTOISE POPULATIONS ARE MAINTAINED**

An area must meet certain requirements to be considered for management of a viable desert tortoise population. There are basic vegetation, topographical, elevation, climatic, and other habitat requirements that make an area capable of supporting desert tortoises. In addition to these limitations, existing and future habitat fragmentation and sources of mortality must be manageable. An area should meet design requirements for good reserves. A long, linear area, for instance, would be unlikely to maintain a population of desert tortoise due to ease of migration into and out of the area.

In the NEMO Planning Area, four areas generally meet the requirements for viable desert tortoise populations based on the considerations in the previous paragraph. Adjacent areas outside of NEMO that provide viable desert tortoise habitat were also taken into consideration in the analysis of potential tortoise management areas. More specifically, identification of the management areas also considered similar areas in the East Mojave being developed on the Mojave National Preserve and already developed areas in southern Nevada. The management areas under consideration also about the Northern Colorado Recovery Unit to the south.

### **A.1.1 BOUNDARIES OF PROPOSED TORTOISE MANAGEMENT UNITS**

The U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG) and BLM identified four areas for potential consideration by the BLM for desert tortoise conservation in the NEMO Planning Area. These four areas have had various names, as noted in parentheses, and include the following:

- (1) Piute Valley Unit (a.k.a. Piute-Eldorado Critical Habitat Unit): This area is bounded on the west and north by the Mojave National Preserve, on the south by I-40, on the east by the Dead Mountains and on the northeast by the Nevada State line. It consists of approximately 173,850 acres, 80 percent of which (about 139,000 acres) is BLM-managed public lands. This unit together with the tortoise habitat in Fenner and Piute Valleys in the Mojave National Preserve and southern Nevada constitute the Piute-Fenner Desert Wildlife Management Area (DWMA).
- (2) Ivanpah Valley Unit (a.k.a. the northeastern portion of the Ivanpah Critical Habitat Unit): This area is bounded on the north by a powerline south of I-15, on the west and south by the Mojave National Preserve (and Nipton Road) and on the east by the Nevada State line. It consists of approximately 37,280 acres, of which about 35,200 acres is BLM-managed public lands.
- (3) Shadow Valley Unit (a.k.a. the northwestern portion of the Ivanpah Critical Habitat Unit): This area is bounded on the north by the Kingston Range, on the west by the Shadow Mountains, on the south by I-15, and on the east by the Clark Mountains. It consists of approximately 114,060 acres, of which approximately 101,355 acres is located



east of Turquoise Mountain Road. Of these 101,355 acres, about 95,280 acres are BLM-managed public lands.

(4) Northern Ivanpah Valley Unit: This area is bounded on the west by the eastern extent of the Clark Mountains, on the north by the Nevada State line and on the south and east by I-15. It consists of approximately 29,110 acres, of which about 27,300 acres are BLM-managed public lands.

## **A.1.2 EVALUATION OF PROPOSED TORTOISE MANAGEMENT UNITS**

### **A.1.2.1 Piute Valley Unit**

This area includes examples of the best desert tortoise habitat remaining in the southern portion of the East Mojave Desert. Tortoise densities vary widely, based on local conditions, ranging from about 10 to more than 350 per square mile, with good age-class distribution. There has been some decline over time and recent tortoise die-off from disease in this area. Existing development is patchy and generally low due to the lack of population centers near public lands. Much of the current use is focused further west (within the Mojave National Preserve), north (Lanfair Valley), or south and east of the area along the State line (Needles-Bullhead area). The Piute Valley ACEC is contiguous with lands managed for viable Desert Tortoise populations to the west in Mojave National Preserve and to the east on public lands managed by Las Vegas Field Office of BLM (Las Vegas Resource Management Plan, 1999) and provides critical linkage between these areas. Lands for the adjacent Northern Colorado Recovery Unit are also contiguous on the south, south of Route 66 and I-40. If the barriers of Route 66 and I-40 can be minimized, the Piute Valley ACEC will also provide an excellent linkage to this desert tortoise habitat to the south. This recommendation is consistent with current and proposed strategies for protection of adjacent National Park Service and BLM habitat of the Eastern Mojave population of the desert tortoise and for adjacent BLM habitat of the Northern Colorado Recovery Unit of the desert tortoise.

### **A.1.2.2 Ivanpah Valley Unit**

This area provides high-density desert tortoise habitat in the southwestern most portion of the Northern and Eastern Mojave Recovery Unit, proposed for inclusion in the East Mojave Recovery Unit. This boundary would exclude approximately 3,280 acres originally included in BLM Category I habitat; however, this 3,280 acres is adjacent to I-15 and is largely an unoccupied dry lakebed that is not suitable habitat. This area includes all critical habitat in upper Ivanpah Valley. The valley has good quality desert tortoise habitat, but there has been one incidence of tortoise die-off from unknown causes and some signs of shell disease have been observed in the population in recent years.

Development is generally low due to the lack of population centers near public lands, but development pressures are increasing to the north and east from Stateline and to the west from MolyCorp activities. The area is contiguous with lands managed for viable desert tortoise populations to the south and west in Mojave National Preserve and by a corridor to public lands managed by BLM's Las Vegas District and provides critical linkage



between these latter areas. This recommendation is therefore consistent with the strategy for protection of adjacent National Park Service and BLM habitat of the Eastern Mojave Recovery Unit of the desert tortoise.

### **A.1.2.3 Shadow Valley Unit**

The area includes all critical habitat from Bull Springs Wash eastward (Bull Springs Wash is adjacent to Turquoise Mountain Road), until it meets with Turquoise Mountain Road, then follow the Road as boundary. This boundary corresponds closely to the boundaries of BLM Category I tortoise habitat, but excludes critical habitat and Category I habitat west of Bull Springs Wash near Turquoise Mountain Road (approximately 12,705 acres) because tortoise populations are lower and the area has habitat fragmentation from roads and small inactive mines. The wash itself is included because it provides one of the few migration connectors for desert tortoises to habitat south of I-15 through the wash underpass. The Shadow Valley area is contiguous with lands managed for viable desert tortoise populations to the south across I-15 in Mojave National Preserve. This area, in conjunction with areas of the Preserve to the south on the other side of I-15, includes a unique genetic unit within California. However, it would be isolated from other DWMA's by non-habitat features to the west (towards Baker). There is low desert tortoise travel through this topographical area. It is further fragmented by I-15 to the south and by higher elevations further to the south.

The area is not yet undergoing substantial development pressures, consists of an almost continuous block of public lands, includes areas of wilderness in the northern one-quarter of Shadow Valley, and would incorporate the northernmost extent of suitable habitat for the Eastern Mojave population of desert tortoise. Desert tortoise densities in this area currently range from 5 to 50 per square mile; potential densities are not known. There has been moderate and increasing tortoise die-off from disease in this area in recent years. This area is also attractive because of its diverse vegetation types and topography that allow tortoises to respond to climatic variation. This recommendation is consistent with the strategy for protection of desert tortoise in the adjacent Mojave National Preserve.

### **A.1.2.4 Northern Ivanpah Valley Unit**

The area located immediately north and west of State line (or Primm) is designated BLM Category I desert tortoise habitat but was not designated as critical habitat by USFWS. The area would not be included in a DWMA because it is relatively small (29,110 acres), is separated from other desert tortoise populations in the NEMO Planning Area by I-15 and Ivanpah Dry Lake, and is undergoing substantial development pressures particularly adjacent to I-15. This recommendation is also consistent with the strategy for desert tortoise adopted by Federal agencies in Nevada. The Nevada strategy did not identify the northern Ivanpah Valley, as an area to be managed for desert tortoise recovery.

## **A.1.3 REGIONAL OVERVIEW OF PROPOSED APPROACH**



With the above proposed ACECS, overall design of tortoise management areas for the Eastern Recovery Unit would include two DWMAs - the Ivanpah-Shadow DWMA and the Piute Eldorado DWMA.

The Ivanpah-Shadow DWMA would include lands within the Mojave National Preserve and two BLM ACECs. Although virtually all tortoise habitat within the Preserve receives a high degree of protection, desert tortoise critical habitat within the Preserve is about 481,290 acres. Contiguous with the Preserve to the northeast, but separated by Nipton Road, is the proposed Ivanpah Valley ACEC. It is 37,280 acres. Contiguous with the Preserve to the northwest, but separated by I-15, is the proposed Shadow Valley ACEC. It is 101,355 acres. Together these three areas (Ivanpah Critical Habitat Unit on the Preserve and proposed Ivanpah Valley and Shadow Valley ACECS) total 619,925 acres. This is about the minimum size set forth in the Recovery Plan.

The Piute-Eldorado DWMA would include lands within the Mojave National Preserve and two BLM ACECs. Desert tortoise critical habitat within the Preserve is about 279,460 acres. Contiguous with the Preserve to the southeast is the proposed Piute Valley ACEC. It is 173,850 acres. The Piute-Eldorado ACEC in Nevada in the Eastern Mojave Recovery Unit is 277,000 acres. Together these three areas (Piute-Eldorado Critical Habitat Unit on the Preserve and proposed Piute Valley ACEC and designated Piute-Eldorado ACEC in Nevada) total 730,310 acres. This is above the minimum size set forth in the Recovery Plan.

The Ivanpah-Shadow DWMA has two connecting corridors with the Piute-Eldorado DWMA between Ivanpah Valley and Piute and one south of Kelso Valley on the Preserve. The two DWMAs in the Eastern Mojave Recovery Unit (Ivanpah-Shadow DWMA and Piute-Eldorado DWMA) total 1,350,235 acres.

## **A.2 OBJECTIVE 2: DEVELOP AND IMPLEMENT MANAGEMENT PRESCRIPTIONS FOR THE ACEC'S TO ADDRESS THREATS SUFFICIENT TO ACCOMPLISH THE GOAL**

The following proposed prescriptions were developed for desert tortoise and its habitat by the issues as described in Appendix D (Description and Strategy for Addressing Major Desert Tortoise Issues) and the Desert Tortoise Current Management Situation for the NEMO Planing Area (Foreman 1998). The prescriptions were developed by the Biological Team based on the BLM Statewide Desert Tortoise Policy and recommendations in the Recovery Plan.

### **A.2.1 GENERAL PRESCRIPTIONS FOR ACTIVITIES WITHIN TORTOISE ACEC'S**

- (1) Authorized ground-disturbing activities shall normally be authorized only between November 1 and March 1. If ground-disturbing activities must be authorized outside this window, an on-site biological monitoring shall be required throughout activities, as well as other stipulations to prevent take.



## Appendix A: Desert Tortoise Conservation Strategy

- (2) New surface disturbing projects shall include specific design features (see mitigation measures in Attachment 1) to minimize potential impacts to desert tortoise and desert tortoise habitat. Using the formal consultation procedures of the Endangered Species Act, the BLM shall seek to obtain from USFWS a programmatic biological opinion covering all projects less than 100 acres in size (any size for utilities in utility corridors) that do not require an EIS or do not require amendment of the CDCA Plan. The mitigation measures set forth in Attachment 1 below are proposed by BLM as terms and conditions for the biological opinion.
- (3) Reclamation would be required for activities that result in loss or degradation of desert tortoise habitat within the desert tortoise wildlife management area, to as close to pre-disturbance condition as practicable. Reclamation may include salvage and transplant of cacti or yucca, re-contouring, scarification of soil, soil amendments, seeding, and transplant of shrubs. Seedlings will be of native species, from seed collected in the area of the project when feasible. See Appendix G for additional discussion.
- (4) Cumulative new surface disturbance on public lands administered by the BLM within any desert tortoise wildlife management area shall be no more than **1 percent** of BLM lands. For the recommended Shadow Valley ACEC, this currently would be approximately **950** acres, for Ivanpah Valley ACEC approximately **350** acres, and for Piute Valley ACEC approximately **1,300<sup>4</sup>** acres. This **1%** limitation would not include needed acreage for expansion of freeways and major highways. The only project identified by CalTrans, in the reasonably foreseeable future, is the widening of Interstate -15 from Victorville, California to Las Vegas, Nevada. See Appendix G for a detailed discussion.
- (5) Compensation for disturbances of public lands within the desert tortoise ACECs shall be required at the rate of five acres for each acre disturbed.(Refer to Appendix G for additional Information). Compensation may be in the form of habitat acquisition or off-site habitat improvement or protection projects, at the discretion of the BLM. As ACECs have fewer parcels available for acquisition from willing sellers and/or as the benefit/cost analysis favors habitat enhancement, it will be pursued in connection with or in lieu of acquisition.

### A.2.2 MINERAL RESOURCES

#### **All Mining including Locatables**

- (1) The desert tortoise ACECs shall remain open to mineral entry under the mining laws, subject to cumulative surface disturbance limitations and compensation for new disturbances, outlined above. Unnecessary and undue degradation will be avoided.

---

<sup>4</sup> This number does not yet reflect recent Wildlands/Catellus/BLM exchange lands.



- (2) BLM shall require a plan of operation and appropriate bonding for any activities involving disturbance of perennial vegetation, vehicle use off of designated open roads and trails, or use of mechanized earthmoving equipment or explosives.
- (3) BLM shall require the operator to reclaim any site upon completion of mining activity, according to a SMARA and BLM-approved reclamation plan and consistent with adopted BLM Standards.

### **Leasables**

- (4) Additionally for oil and gas and geothermal activities, drill pads shall be located on disturbed areas or areas adjacent to designated open or limited routes, if technically feasible (e.g. slant drilling).

### **Saleables**

- (5) Development and production, including expansion of existing and new pits may be permitted. Wherever feasible, existing pits shall be utilized to minimize new surface disturbance.
- (6) Non-commercial hand-collection of rock may occur anywhere, subject to motorized access limitations: (43CFR 8365.1-5)

## **A.2.3 GRAZING MANAGEMENT**

Utilize Regional Standards and Guidelines for Grazing Management, CDCA Plan, allotment management plans, and terms and conditions from the existing FWS biological opinions. For allotments within the ACECs:

- (1) Allow voluntary relinquishment of grazing lease and related authorizations.
- (2) Temporary nonrenewable grazing use (perennial) shall not be authorized.
- (3) Cattle shall be substantially removed from the ACEC from 3/15 to 11/1 according to an allotment program during years when ephemeral forage production is less than 230 pounds per acre. The allotment program shall be developed within a year and implemented within two years after that. The allotment program shall be a written plan detailing the area of removal, natural cattle movements, existing and potential improvements, and other constraints of cattle management.
- (4) Terminate ephemeral allotments and terminate ephemeral authorization for ephemeral/perennial allotment.
- (5) Continue to apply stipulations in the existing USFWS biological opinions for cattle grazing. (See Appendix F)



- (6) Include additional parameters as needed to discourage the use of range improvements by ravens.

#### **A.2.4 FIRE MANAGEMENT**

Fires occurring in ACECs shall be managed in accordance with non-impairment criteria, as identified below with minimal disturbance to resource values within the ACEC.

- (1) Before the beginning of each fire season, firefighters and support personnel will be provided with a briefing on tortoises and their habitat. This education program will focus on minimizing take of any listed species, particularly take due to vehicle use.
- (2) Wildfires within the tortoise ACECs will be suppressed using a mix of the following methods to avoid impairment:
  - a. aerial attack;
  - b. crews using hand tools to create fire breaks;
  - c. mobile attack engines limited to public roads, designated open routes, and routes authorized for limited-use;
  - d. use of foam and/or fire retardant;
  - e. earth-moving equipment and other tracked vehicles (such as bulldozers) will not be used except in critical situations to protect life, property, or resources.
- (3) BLM will assign a Resource Advisor on all wildfires exceeding initial attack.
- (4) Use of surface disturbing equipment, such as bulldozers, is restricted due to the sensitive desert environment. Such equipment can be utilized with field manager approval or at the discretion of the Incident Commander, when life and property are threatened. An on-site Resource Advisor, may authorize the limited use of such equipment if, in his or her estimation, the fire is serious enough that direct mortality and loss of habitat to the desert tortoise that would result from the fire is significant and other control means will not effectively prevent spread.
- (5) Backfires and burning of unburned fingers and islands would be discouraged and alternatives considered in tortoise ACECs.
- (6) On-road travel speeds will be kept low to reduce take of desert tortoise.
- (7) Off-road vehicle travel will be restricted to the minimum necessary to suppress wildfires.
- (8) Individuals trained to recognize tortoises and their shelter sites will precede any vehicle traveling off-road.



- (9) Camps, staging areas, and helispots will be pre-surveyed for tortoises and burrows by the assigned environmental specialist. Camps will be established within previously disturbed areas whenever practicable
- (10) Post-suppression mitigation shall include rehabilitation of firebreaks and other ground disturbances and obliteration of vehicle tracks sufficient to discourage future casual use. Hand tools will be used for rehabilitation activities whenever feasible.

#### **A.2.5 VEGETATION RESOURCES**

- (1) BLM shall not issue permits for live vegetation harvest, except in salvage areas where surface disturbance has been authorized
- (2) No mechanical treatment or type conversion shall be allowed unless it benefits or improves tortoise habitat.
- (3) Collection of dead and down wood, with the exception of Joshua trees or yucca species, is allowed for personal camp use.
- (4) BLM will reduce the frequency and extent of surface disturbing activities to minimize invasion of weedy plants, whenever possible.

#### **A.2.6 LANDS AND REALTY**

- (1) Lands shall not be available and shall not be classified or otherwise determined suitable for authorization or entry, under the following authorities:
  - a. Agricultural Land Laws (e.g., Desert Land Entry, Carey Act, Indian Allotment);
  - b. Recreation and Public Purposes Act;
  - c. FLPMA Lease/Sale; Exceptions may be considered for sales of hazardous material sites to Potentially Responsible Parties;
  - d. Airport Lease/Grant; and
  - e. Non-protective withdrawals.

**Discussion:** Certain types of discretionary land authorizations and entries constitute long-term disturbance and/or loss of habitat, which is inconsistent with tortoise conservation and recovery in ACECs.

- (2) All new major linear utilities shall be placed in existing, designated utility corridors consistent with the existing CDCA Plan Energy Production and Utility Element. To the extent feasible, existing routes would be utilized to provide access for maintenance of rights-of-way.
- (3) The poles and towers of electrical distribution lines shall be designed to discourage raven nesting.

#### **A.2.7 HABITAT ENHANCEMENT**



- (1) In authorizations for projects that will disturb habitat, the BLM shall apply stipulations requiring rehabilitation of the disturbance. The rehabilitation shall be at least to the point where the topography, soils and vegetation conditions have been established for return to pre-disturbance conditions. This includes such actions as closing access to non-designated roads and restoring non-designated roadbeds to a condition suitable for their natural return to a pre-disturbance state. With regard to tortoise needs, the purpose is to return the habitat to meet the following needs:
  - a. Lands are suitable for burrowing, if they would have been suitable prior to disturbance. This is characterized by stabilized, non-compacted soils;
  - b. Lands are adequate for foraging as indicated by sustainable replenishment of annual vegetation utilized by the desert tortoise in the area;
  - c. Lands provide adequate thermal cover through perennial shrubbery and other natural features utilized by the desert tortoise in the area;

More specific criteria are now under development by the Desert Wide Restoration Taskforce. Site-specific rehabilitation standards will be developed for each site, to be supplemented with guidance provided by that Taskforce. See Appendix G for additional information on this effort.

- (2) BLM may use compensation funds for enhancement of tortoise habitat after coordination with CDFG and USFWS. (See A.2.1 Item 5).

#### **A.2.8 TRANSPORTATION/ACCESS**

- (1) BLM shall designate roads and trails within the DWMAs as "open", "limited use" or "closed". The BLM shall prohibit motorized vehicle activity off of designated open roads and trails, except for official fire suppression, search and rescue, law enforcement, or other similar administrative need (including access to projects such as fences, waters, utilities) or for vehicle-based camping adjacent to open routes. "Limited use" routes are designated for special use (e.g., seasonal closure) or permitted access (e.g., a landowner to private lands). See Chapter 7, Figures 4a, b and c. Biological Parameters to minimize harassment of wildlife or significant disruption of wildlife habitat will be followed during the route designation process, including:
  - (a) Washes will be closed unless they provide the major through access in an area and no reasonable alternative exists, or they provide access to a major recreational site and do not result in substantive degradation of habitat;
  - (b) The route designation process shall consider fragment size;
  - (c) Closure of routes within ¼ mile of any significant bat roost shall be strongly considered;
  - (d) Closure of routes within ¼ mile of known prairie falcon or golden eagle eyries (cliff nests) shall be strongly considered;



- (e) Closure of routes within ¼ mile of natural or artificial water sources (e.g. springs, seeps, streams, guzzlers) shall be strongly considered;
  - (f) Closure of “redundant” routes shall be strongly considered.
- (2) All DWMA lands bordering Interstate freeways and major highways shall be fenced. Priorities for fencing are the following:
- a. Interstate highways abutting or passing through a tortoise ACEC, and
  - b. Based upon average daily travel exceeding 1,000 vehicles and tortoise density exceeding 50 per square mile, the following highways:
    - 23.9 miles along U.S. 95 through Piute Valley from the California border to the intersection with Burlington Northern/Santa Fe Railroad at Arrowhead Junction; and
    - 11 miles along Nipton Road between the California border near Nipton to I-15.
- (3) Fencing shall meet current specifications concerning mesh size, burial and design standards and shall be placed on both sides of the road. These standards will consider prevention of roadkills to discourage ravens and coyotes.
- (4) Closed roads/routes shall be rehabilitated whenever necessary to prevent their continued use and to speed restoration.
- (5) Physical maintenance and grading shall be the minimum necessary to maintain the use of the road for its prescribed purposes. Grading shall be conducted consistent with specified standards to prevent trapping desert tortoises within the roadbed, including appropriate standards for road berms.

#### **A.2.9 RECREATION RESOURCES**

- (1) Restrict vehicle camping to within 100 feet of centerline of designated open roads in previously disturbed areas. BLM shall provide visitor information to encourage visitors to camp in areas that have already been disturbed.
- (2) Allow dispersed non-motorized recreational activities in desert tortoise ACECs. Development of new recreational facilities, such as visitor centers, developed campgrounds, new designated non-motorized trails, shall not be allowed in the ACECs if these would create new permanent surface disturbance. Marking of existing non-motorized trails to known visitation sites to encourage use of one identified path is appropriate, if existing use has created an area of disturbance. Installation of interpretive signing and informational kiosks shall be encouraged.
- (3) Prohibit competitive speed events in the desert tortoise ACECs. Landsailing permits may be authorized for the Ivanpah lakebed outside of the ACEC, subject to



appropriate terms and conditions. Secondary impacts from such events, such as group campsites, shall also be sited outside of the ACEC.

- (4) Restrict dual sport events to designated open routes between November 1 and March 1, continuing the existing ceiling on the number of riders per event (i.e., 500 riders) and any route-specific resource limitations.
- (5) Allow hunting according to current State legislation and regulations. Motorized access for hunting shall be limited to designated open or seasonally limited routes.

#### **A.2.10 WILD HORSE AND BURRO**

- (1) Modify the Clark Mountain Herd Management Area (HMA "F" Map 8 of the CDCA Plan) boundary to exclude that area located within the Shadow Valley ACEC.
- (2) Eliminate the herd concentration area (Concentration Area "27" on Map 8 of the CDCA Plan) within the Shadow Valley ACEC.

**Discussion:** The appropriate management level (AML) for the Clark Mountain HMA would change from 44 burros in the current HMA (all in the Shadow Valley Concentration Area) to 60 burros in the reduced HMA (all in two concentration areas to the east of Shadow Valley and outside of tortoise ACECs) (See Chapter 7, Figure 8). This would be modified later after 5-year carrying capacity analysis, which would be based on the remaining forage provided by the modified HMA, other foragers, range condition, and other factors

Burros located in the Shadow Valley ACEC would be removed and any potential drift managed through relocation by direct or indirect means to the two remaining herd concentration areas within the reduced Clark Mountain HMA. Terms and conditions would be identified and incorporated into the Clark Mountain HMA Plan. They would include 40%<sup>5</sup> maximum utilization levels on key forage species in desert tortoise habitat in order for burro use to continue in particular areas; as well as strategies to manage drift into the ACEC; areas to be fenced; and other needed range improvements required specifically to promote desert tortoise conservation and recovery (See Appendix G).

- (3) Apply stipulations for wild horse and burro management in desert tortoise habitat (See Appendix F).

#### **A.2.11 WILDLIFE**

- (1) Existing wildlife guzzlers shall be modified to minimize mortality to desert tortoises, and new guzzlers shall incorporate appropriate design features to do the same.

---

<sup>5</sup> Maximum utilization levels on key forage species would be further limited to 30% until range condition improves to "Good". Current condition of the allotment is "Fair".



- (2) The BLM shall identify lands for potential relocation, on a case-by-case basis, in coordination with USFWS, CDFG and private landowners who may wish to relocate desert tortoises from private lands slated for development onto nearby public lands within the tortoise ACECs.

#### **A.2.12 RAVENS**

- (1) Within DWMA's, the BLM shall work with other agencies to implement a raven management strategy to reduce raven predation on tortoises. This raven management plan is based on the work of biologist Bill Boarman, who has identified the key elements of a successful raven management program. Early priorities for implementation of this phased approach in the NEMO planning area includes the following items:
  - a. The BLM will work with other agencies to achieve fencing of major highways to minimize road kills as a food source for raven populations;
  - b. The BLM will remove ravens that are known to prey on tortoises through selective shooting or trapping and euthanasia where there is evidence of raven predation in or within one mile of DWMA's;
  - c. To the extent possible, the BLM shall eliminate human-caused sources of raven food as identified (e.g., illegal dumps, uncovered trashcans) at specified sources within DWMA's;
  - d. BLM will work with other agencies to reduce the availability of solid wastes at operating sanitary landfills outside of DWMA's and on overall programs to reduce the availability of organic wastes (related to facilities and methods for trash service, dump stations, and composting practices) unrelated to sanitary landfills;
  - e. BLM will work with other agencies and local jurisdictions to reduce the availability of unnecessary waters (related to facilities and methods for sewage treatment, pool/pond design, and irrigation);
  - f. BLM will pursue raven management research as identified by the Desert Tortoise Management Oversight Group, to identify habitat requirements and control methodologies in the settings that the NEMO DWMA's provide, where populations appear to range over larger, less densely inhabited areas with longer commuter distances between major feeding locations. An unknown factor is the amount of habitat being provided by agricultural lands within the DWMA's.
  - g. Proposed projects on public lands in the planning area which have the potential for increasing raven populations will be reviewed for design and operation features to reduce or eliminate the opportunity for proliferation of ravens.
  - h. This program will be modified as needed to address the changing threat that ravens may pose in the planning area.

#### **A.2.13. LAW ENFORCEMENT**



- (1) The law enforcement effort shall be aimed at enforcing wildlife regulations and reducing illegal dumping, littering, arson, cross-country vehicle travel, and vandalism.

#### **A.2.14 OTHER ISSUES**

- (1) The BLM shall cooperate with other groups and agencies to identify areas where uncontrolled dogs are causing desert tortoise mortality. In the event such a situation is discovered, BLM will encourage San Bernardino County to adopt or enforce ordinances prohibiting uncontrolled dogs in those areas.
- (2) The BLM shall cooperate with CDFG, USFWS, and other groups and agencies to identify areas where vandalism (e.g. shooting, collecting) of desert tortoises is occurring and take measures to prevent future occurrences.

### **A.3 OBJECTIVE 3: ACQUIRE SUFFICIENT HABITAT IN ACEC'S TO ENSURE THAT MANAGEMENT STRATEGIES ARE EFFECTIVE**

Habitat fragmentation is a major contributor to population declines (Berry 1984b, Berry & Burge 1984, Berry & Nicholson 1984b and Berry 1984c). Desert tortoises require a great deal of space to survive. Over its lifetime, each desert tortoise may require more than 1.5 square miles of habitat and may make forays of more than 7 miles at a time. In drought years, desert tortoises forage over larger areas and thus have a greater probability of encountering potential sources of mortality. Roads and urban areas form barriers to movement with higher raven densities, and tend to create small, local desert tortoise populations, which are much more susceptible to extinction than large, connected ones (Wilcox & Murphy 1985). Actions to ensure adequate desert tortoise habitat include:

- (1) The BLM shall seek to acquire State Lands Commission lands and private lands within ACEC's by exchange, donation, or voluntary purchase. Acquisitions shall include surface and subsurface mineral rights wherever possible. Any lands acquired within tortoise ACECs will be managed in accordance with recovery area prescriptions.
- (2) The highest priority parcels for acquisition are a) all lands in Piute Valley ACEC and b) three sections near Nipton Road in Ivanpah Valley.
- (3) Compensation funds may be utilized for acquisition or enhancement of tortoise habitat.
- (4) BLM shall not dispose of public lands within any tortoise ACEC, unless in the overall interest of desert tortoise conservation and recovery.



**A.4 OBJECTIVE 4: MONITOR TORTOISE POPULATIONS TO ASSESS EFFECTIVENESS OF MANAGEMENT PRESCRIPTIONS IN MEETING RECOVERY GOAL IN THESE AREAS**

A monitoring program is essential to determine (a) whether actions taken in the ACECs are effective and (b) whether desert tortoise recovery goals are being achieved. To accomplish this the following monitoring program is proposed:

- (1) The BLM shall participate with other agencies in a regionwide desert tortoise population trend monitoring program using the distance sampling procedures approved by the Desert Tortoise Management Oversight Group. The Desert Tortoise Program Coordinator will oversee monitoring surveys, data storage, and data analysis.
- (2) In addition to the rangewide desert tortoise monitoring effort, the BLM shall continue to monitor Shadow Valley desert tortoise permanent study plot on a four-year cycle to collect data on population size and demographics, direct mortality, vegetative trend, and uses for the area.
- (3) The BLM in coordination with CDFG and USFWS shall establish an implementation monitoring strategy. This strategy would include monitoring of burro use and population distribution consistent with public lands health standards, monitoring of guzzlers to assure proper functioning, compliance monitoring for permitted activities and uses, and tracking of cumulative new surface disturbance.
- (4) If population declines become evident in any tortoise ACEC, efforts to determine causes of population emigration and/or mortality should be pursued immediately in order to prevent extirpation. Efforts to recolonize the ACEC with wild desert tortoise from the same recovery unit should be undertaken if feasible. Long-term research and monitoring would be necessary to ensure the success of any such recolonization effort. In addition to these actions, emergency closures of cattle allotments or placements of allotments and licenses into non-use categories may be needed in affected areas to reduce stresses and provide additional forage. Land and mineral withdrawals may also be required to prevent impacts to desert tortoise and their habitat until adequate recovery occurs in the affected area.

**A.5 OBJECTIVE 5: ESTABLISH AN ENVIRONMENTAL EDUCATION PROGRAM TO FACILITATE UNDERSTANDING OF DESERT TORTOISE THREATS AND RECOVERY NEEDS AND COMPLIANCE WITH MANAGEMENT STRATEGIES IN THESE AREAS**

Visitor centers, interpretive sites, guided tours, and campgrounds are all appropriate in towns near desert tortoise wildlife management area units to educate the public about the



status and needs of the desert tortoise and its habitat. In addition, desert tortoise programs should be developed for use in schools, museums, clubs, the media etc. Education efforts should be focused on groups using the desert on a regular basis. In addition, private landowners and other land managers can be encouraged to implement management actions that promote the conservation of other species and biotic communities.

These actions are recommended to increase manageability, establish an enforcement presence, effect an immediate reduction in the threats to desert tortoise populations in desert tortoise ACECs and build local support for the wildlife management area concept. Specific educational programs within the NEMO planning area, in addition to the above, include:

- (1) Install informational kiosks at major access points and informational signs at other access points to the desert tortoise wildlife management area units.
- (2) Work with CalTrans to design and install separate, freestanding, interpretive kiosks with desert tortoise protection information at Halloran Springs and Fenner Valley rest areas.
- (3) Update Desert Access Guides to include desert tortoise information.
- (4) Update desert tortoise brochures and informational packets to reflect changes identified for the tortoise ACECs (e.g., camping distance change to 100 feet off routes).
- (5) Develop an update to the existing BLM webpage for the desert tortoise recovery planning efforts.
- (6) Implement other elements of the Statewide Tortoise Policy Public Outreach Program as funding becomes available.

#### **A.6 OBJECTIVE 6: CONTINUE RESEARCH NECESSARY TO ASSESS RELATIVE IMPORTANCE OF THREATS TO THE DESERT TORTOISE IN THESE AREAS AND TO EVALUATE AND IMPROVE MECHANISMS TO ADDRESS THESE THREATS.**

Unlike the situation with many threatened or endangered species, considerable data exists on many aspects of the biology of the desert tortoise. Although there is also much information on the effects of human activities, much of the data has limited usefulness for site specific recovery planning. The magnitude and scope of new research data essential for recovery planning requires an unprecedented level of coordination and cooperation within and among agencies. Biologists and research scientists in the Department of Interior (BLM, NPS, Bureau of Reclamation and USGS Biological Resources Division), Department of Defense, and other Federal and State agencies must work together to



achieve this goal. No one agency can handle the entire essential research and monitoring. Employing the talents of academic researchers will be essential.

The Desert Tortoise Technical Advisory Group (TAC), which reports directly to the Management Oversight Group (MOG), has prepared and periodically updated a list of research priorities. With the large number of researchers involved in desert tortoise issues, many topics on the list and their relative priority change rapidly. In 2000, the TAC prepared a list of research priorities for each Recovery Unit. Although it is expected that these priorities will change, following is the list generated for the MOG in 2000 for the Northern and Eastern Recovery Unit:

#### **Recommended high priority research topics**

- Epidemiology of upper respiratory tract disease in wild desert tortoise populations.
- Epidemiology of shell diseases in wild desert tortoise populations.
- Relationship between environmental toxicants and tortoise health.
- Ecological relationship between fire and alien plant invasion and distribution.
- The relationship between tortoise distribution and alien plant invasion and distribution.
- Demography and mortality in desert tortoise populations.

#### **Recommended medium priority research topics**

- Validation and refinement of distance-sampling techniques for tortoise monitoring.
- Long-distance movements in and fragmentation of desert tortoise populations.
- Effectiveness of barrier fences and culverts in recovery of a local desert tortoise population.
- Impacts of OHV use on approved routes of travel on tortoise populations and habitat.
- Geographic variation and environmental determinants of reproductive output in the desert tortoise.

#### **Recommended low priority research topics**

- Ecology of raven predation on desert tortoises and raven behavior, particularly in more natural landscapes where tortoise predation is occurring.
- Ecology of hatchling and juvenile desert tortoises in Mojave Desert habitats.
- Effects of cattle grazing on desert tortoise populations.
- Restoration and rehabilitation of desert tortoise habitat in the Mojave.

### **A.7 MANAGEMENT ACTIONS IN DESERT TORTOISE HABITAT OUTSIDE ACECS**



- (1) Authorized ground-disturbing activities may occur year-round.
  - (2) Reclamation shall be required for activities that result in loss or degradation of desert tortoise habitat to as close to pre-disturbance condition as practicable. Reclamation may include, but are not limited to, salvage and transplant of cacti or yucca, re-contouring, scarification of soil, soil amendments, seeding, and transplant of shrubs. Seedlings shall be of native species, from seed collected in the area of the project when feasible.
  - (3) There are no cumulative acreage disturbance limitations to desert tortoise habitat outside of the ACECs.
  - (4) Compensation shall be required by BLM for disturbances of desert tortoise habitat at the rate of 1 acre for each acre disturbed; this is the same as the current requirement in BLM's Desert Tortoise Statewide Management Policy. Funds collected from project proponents shall be directed to habitat enhancement, rehabilitation or acquisition in the Eastern Mojave Recovery Unit. Proponents may also implement enhancement or rehabilitation projects or donate lands directly, at BLM discretion.
  - (5) New surface disturbing projects shall include specific design features (see mitigation measures section in Attachment 1) to minimize potential impacts to desert tortoise and desert tortoise habitat. Using the formal consultation procedures of the Endangered Species Act, the BLM shall seek to obtain from USFWS a programmatic biological opinion covering all projects less than 100 acres in size (any size for utilities in utility corridors) that do not require an EIS or do not require amendment of the CDCA Plan. The mitigation measures set forth in Attachment 1 below are proposed by BLM as terms and conditions for the biological opinion.
-



## **ATTACHMENT 1: DESERT TORTOISE MITIGATION MEASURES**

### **INTRODUCTION**

These measures are intended to minimize impacts to the tortoise. In various wordings, they have been included in biological opinions issued by USFWS and in land-use decisions rendered BLM and others on Federal lands.

### **GENERAL MITIGATION MEASURES**

#### **1. Designated Persons**

In the following measures, a "qualified biologist" is defined as a person with appropriate education, training, and experience to conduct tortoise surveys, monitor project activities, provide worker education programs, and supervise or perform other implementing actions. The person must demonstrate an acceptable knowledge of tortoise biology, mitigation techniques, habitat requirements, sign identification techniques, and survey procedures. Evidence of such knowledge may include work as a compliance monitor on a project in desert tortoise habitat, work on desert tortoise trend plot or transect surveys, or other research or field work on desert tortoise. Attendance at a training course endorsed by the agencies (e.g., Desert Tortoise Council tortoise training workshop) is a supporting qualification.

An "authorized biologist" is defined as a wildlife biologist who has been authorized to handle desert tortoises by the USFWS and CDFG for this project. Name(s) of proposed authorized biologist(s) must be submitted to the USFWS and CDFG for approval at least 15 days prior to anticipated need.

A "Field Contact Representative" (FCR) is defined as a person designated by the project proponent who is responsible for overseeing compliance with desert tortoise protective measures and for coordination with the agency compliance officer. The FCR must be on-site during all project activities. The FCR shall have the authority to halt all project activities that are in violation of these measures. The FCR shall have a copy of all tortoise protective measures when work is being conducted on the site. The FCR may be an agent for the company, the site manager, any other project employee, a biological monitor, or other contracted biologist."

#### **2. Worker Training**

All workers, including all participating agency employees, construction and maintenance personnel, and others who implement authorized actions shall be given special instruction. This instruction will include training on distribution, general behavior and ecology, protection afforded by State and Federal endangered species acts (including prohibitions and penalties), and procedures for reporting encounters, and the importance of following the protection measures. The education program may consist of a class or video presented by a qualified biologist. It is recommended that workers carry wallet cards with important information while in the field. (See Fig #A-1)



### **3. Compliance**

The FCR shall oversee compliance and coordination with the authorizing agency. Compliance shall include conducting species surveys, proper removal of species from areas being impacted, assurance that a sufficient number of qualified biologists are present during surface disturbance, and that all conditions of the authorization are being met by proponent, contractors, and workers. The FCR shall have the authority to halt activities that are not in compliance with the authorization.

Any incident occurring during project activities, which is considered by the biological monitor to be in non-compliance with the mitigation plan, shall be documented immediately by the biological monitor. The FCR shall ensure that appropriate corrective action is taken. The monitor shall document corrective actions. The following incidents shall require immediate cessation of the construction activities causing the incident, including:

- a. imminent threat of injury or death to a desert tortoise;
- b. unauthorized handling of a desert tortoise, regardless of intent;
- c. operation of construction equipment or vehicles outside a project area cleared of desert tortoise, except on designated roads, and
- d. conducting any construction activity without a biological monitor where one is required (see Term and Condition 2.1). If the monitor and FCR do not agree, the Federal agency's compliance officer shall be contacted for resolution. All parties may refer the resolution to the Federal agency's authorized officer."

After completion of the project, the participating agency that authorized the project shall conduct a review to determine if the project proponent complied with the conditions of authorization. Corrective actions shall be required of the proponent where conditions have not been met.

### **4. Compensation**

A mitigation fee based on the amount of acreage disturbed shall be required of proponents of new development. Compensation in Category I shall be required at the rate of five acres for each acre disturbed. Compensation in Category III shall be at the rate of one acre for each acre disturbed.

Compensation shall be in the form of habitat acquisition or enhancement or funds to accomplish these.

### **5. Tortoise Seasonal Restrictions**

To the extent possible, activities shall be scheduled when tortoises are inactive (November 1-March 1). Dual-sport (non-speed, trail-ride) events and non-emergency maintenance of roads are restricted to this season in wildlife management area units.



## **6. Pre-Construction Clearance Surveys**

Pre-construction surveys shall be conducted to locate and remove desert tortoises prior to grading or actions which might result in harm to a desert tortoise or which remove tortoise habitat. The survey shall be conducted by an Authorized Biologist within 24 hours of the onset of the surface disturbance unless a tortoise-proof fence has been installed that would prevent re-entry of the animals.

## **7. Site Fencing and Hazard Removal**

During the tortoise active season, March 1 - November 1, no overnight hazards to desert tortoises (e.g., auger holes, trenches, pits, or other steep-sided depressions) shall left unfenced or uncovered; such hazards shall be eliminated each day prior to the work crew leaving the site.

Large or long-term project areas shall be enclosed with tortoise-proof fencing to keep desert tortoises out of the work area. The fencing shall be wire mesh with a maximum mesh size of 1-inch (horizontal) by 2-inch (vertical) fastened securely to posts. The wire mesh shall extend at least 18 inches above the ground and preferably about 12 inches underground. Where burial is not possible, the lower 12 inches shall be folded outward and fastened to the ground. Any gates or gaps in the fence shall be constructed to prevent entry of tortoises. The fencing shall be removed when restoration of the site is completed.

Temporary fencing shall be required around test sites where trenching or drill holes could trap animals or around other small, short-term projects where tortoises could move into the work area. Occasionally, seasonal restrictions and/or monitoring may be substituted to alleviate the need for fencing. Fenced areas are to be cleared of tortoises by an authorized biologist prior to project activities.

## **8. Surface Disturbance**

All surface disturbing activity shall be limited to the land area essential for the project. In determining these limits, consideration shall be given to topography, public health and safety, placement of facilities, location of burros and vegetation, avoidance of sensitive resources and other limiting factors. Work area boundaries and special habitat features shall be appropriately marked to minimize disturbance. All workers shall strictly limit their activities and vehicles to the areas marked. All workers shall be trained to recognize work area markers and to understand equipment movement restrictions. Where possible, previously disturbed areas shall be used as worksites and for storage of equipment, supplies, and excavated material.

Blading of work areas shall be minimized to the extent possible. Pre-construction activity, such as removal of vegetation, shall occur in the presence of a Qualified Biologist and if necessary, a qualified archaeologist or data archaeological technician (DAT). Disturbance of shrubs shall be avoided to the extent possible. Where shrubs must



be disturbed, they shall be crushed rather than bladed or excavated, unless excavation of an area is specifically authorized. Topsoil shall be set aside and reapplied as part of reclamation activities. Surface disturbance activities in areas that may affect properties on or eligible for the National Register of Historic Properties must have a site-specific evaluation prior to disturbance, and appropriate consultation with the CA-SHPO<sup>6</sup> and/or affected tribes. All ground disturbing activities will comply with the Native American Graves Protection and Repatriation Act.

Project maintenance and construction, stockpiles of excavated materials, equipment storage, and vehicle parking shall be limited to existing disturbed areas wherever possible. Special habitat features, particularly tortoise burrows and archaeological sites (if present) shall be flagged by the Qualified Biologist so that they may be avoided by installation equipment and during placement of poles and anchors.

Cultural or tribal features uncovered during surface disturbance activities will result in cessation of activities in the affected area until the evaluation of the find by a qualified archaeologist can occur. In the case of inadvertent finds of Native American human remains the most likely affected tribe or tribes will be notified in addition to the Native American Heritage Commission and the coroner as provided by law.

## **9. Biological Monitor**

For activities conducted between March 1 and November 1 in desert tortoise habitat, construction and operation activities shall be monitored by a qualified biologist approved by BLM. The qualified biologist shall be present during all activities in which encounters with tortoises may occur. The qualified biologist shall watch for tortoises wandering into the construction areas, check under vehicles, examine excavations and other potential pitfalls for entrapped animals, examine exclusion fencing, and conduct other activities necessary to ensure that death or injuries of tortoises is minimized.

## **10. Refuse Disposal**

All trash and food items generated by construction and maintenance activities shall be promptly contained and regularly removed from the project site to reduce the attractiveness of the area to common ravens and other desert predators. Portable toilets shall be provided on-site if appropriate.

## **11. Dogs**

For a long-term occupancy, dogs shall be restrained either by enclosure in a kennel or by chaining to a point within the tortoise proof enclosure if one has been constructed for the activity. Dogs must always be under control. Control may be exercised by voice command or by leash.

---

<sup>6</sup> California State Preservation Office



## 12. Ravens

Structures which may function as common raven nesting or perching sites are not authorized except as specifically stated in the appropriate BLM document. The proponent shall provide a graphic description of all structures to be erected on the site. Some actions are required to mitigate actual nesting on authorized structures, such as requiring the proponent to secure necessary permits to remove nests and to remove such nests in a timely fashion. USFWS does not (or rarely) authorize nest removal if birds are present in the nest, but does authorize nest removal after birds have left.

## 13. Motorized Access

Where possible, motor vehicle access shall be limited to maintained roads and designated routes. Where temporary access off a maintained road or designated route is permitted, a Qualified Biologist shall travel with each work crew to ensure that all desert tortoises and their burrows are avoided and that impact to the habitat is minimized. All vehicle tracks that might encourage public use shall be obliterated after temporary use.

Where access from a maintained road or designated route to a project's site is part of the approved development plan, length and location of the route shall be designed to minimize impact to the habitat. The amount of disturbed area shall be subject to the mitigation fee, and the route shall be designated "Limited Use" and not open to the public.

- a. **Speed Limits:** Vehicle speed within a project area, along right-of-way maintenance roads and on routes designated for limited use shall not exceed 20 miles per hour. Speed limits shall be clearly marked by the proponent, and workers shall be made aware of these limits.
- b. **Tortoises Under Vehicles:** Vehicles parked in desert tortoise habitat shall be inspected immediately prior to being moved. If a tortoise is found beneath a vehicle, the Authorized Biologist shall be contacted to move the animal from harms-way, or the vehicle shall not be moved until the desert tortoise leaves of its own accord. The Authorized Biologist shall be responsible for taking appropriate measures to ensure that any desert tortoise moved in this manner is not exposed to temperature extremes, which could be harmful to the animal.

## 14. Route Maintenance and Surface Restoration

The following mitigation measures shall be implemented during all route maintenance and surface restoration projects:

- a. **Heavy Equipment:**
  - Operators of heavy equipment (such as roadgraders) shall be accompanied by a biological monitor who is a qualified biologist when working in wildlife



management area units during the desert tortoise's active period (March 1 to November 1). The biological monitor shall walk **in front** of the equipment during its operation and shall function as the FCR and have the responsibility and authority to halt all project activity should danger to a desert tortoise arise. Work shall proceed only after hazards to the desert tortoise are removed, the desert tortoise is no longer at risk, or the desert tortoise has been moved from harms way by an Authorized Biologist. This measure does not currently apply to County or Caltrans road work on BLM land.

- During the desert tortoise's inactive period (November 1 to March 1) an on-site monitor is not required, but the equipment operator shall be qualified as described under measure 16d. Otherwise a biological monitor shall accompany the operator. The operator shall watch for desert tortoises while using the equipment and shall have the responsibility for preventing harm to desert tortoises, as described under measure 16a.
- Operators of light equipment used for trail maintenance and project leaders for surface reclamation actions shall watch for desert tortoises during all project activities. They shall have the responsibility for preventing harm to desert tortoises, as described under measure 16

b. **Qualification:** Operators shall be qualified as described in measure 16d.

c. **Injury:** Should any desert tortoise be injured or killed, all activities shall be halted, and the authorized biologist immediately contacted. The biologist shall have the responsibility for determining whether the animal should be transported to a veterinarian for care, which is paid for by the project proponent, if involved. If the animal recovers, USFWS is to be contacted to determine the final disposition of the animal; few desert tortoises are returned to the wild.

d. **Report:** The equipment operator, or Authorized Biologist shall keep a tally of all desert tortoises seen, moved, injured or killed during the project. Other required elements are rating the effectiveness of required mitigation, a breakdown of actual habitat disturbance, and suggestions for improving mitigation

e. **Water Ditches:** The equipment operator or Qualified Biologist shall inspect water ditches for desert tortoise burrows before moving or shoveling any soil. If a desert tortoise burrow is present, the water ditch shall be left undisturbed if possible. If the equipment operator inspects water ditches for desert tortoise burrows, he or she shall be adequately trained as described in 16a.

f. **Burrows :** If a burrow is occupied by a desert tortoise and avoidance of the burrow is not possible during road maintenance or reclamation activities, the Authorized Biologist shall make the final determination. Only an Authorized Biologist may excavate the desert tortoise, following established protocols.



- g. **Grading:** To avoid building up tall berms that may inhibit desert tortoise movement, the operator shall minimize lowering of the roadbed while grading. Berms higher than 12 inches or a slope greater than 30 degrees shall be pulled back into the roadbed.
- h. **Speed Limits:** The equipment operator shall watch for desert tortoises on the road whenever driving, transporting or operating equipment. Driving speeds shall not exceed 20 miles per hour, and operating speeds should not exceed 5 miles per hour to allow for adequate visibility.

## **SPECIAL MITIGATION FOR SPECIFIC USES IN WILDLIFE MANAGEMENT AREA UNITS**

### **15. Mineral Exploration and Development**

In addition to mitigation measures described above for general mitigation, the following special mitigation measures shall apply to small mining operations and minor exploration and test drill holes in which the surface disturbance or area from which desert tortoises are to be removed is less than ten acres. Some of these measures may be applied in desert tortoise habitat outside of wildlife management area units as well.

- a. **Compliance:** A Qualified Biologist shall be on-site during the initial construction activities or until the area is fenced and cleared of tortoise
- b. **Explosives:** If explosives are authorized in any desert tortoise habitat, the BLM's field office biologist shall verbally consult with the appropriate USFWS office to determine what measures shall be required to reduce the potential to take desert tortoises. These measures may include:

- (1) Seasonal restrictions upon the use of explosives;
- (2) Temporary removals of desert tortoises from areas potentially at risk during detonation either directly from the explosion or by thrown materials. All handling and storage of desert tortoises for this purpose shall be conducted as described in measure 3 by an Authorized Biologist.
- (3) Covering of desert tortoise burrows to reduce impacts of flying materials.

### **16. Non-Competitive Recreational Events**

The following measures shall apply to all vehicle-oriented, dual-sport, and other non-competitive trail events:

- a. **Timing:** Events in wildlife management area units shall be held during the inactive season for desert tortoises, generally considered being between November 1 and March 1. Routes selected shall avoid impacting other special



status plants and animal species. Any course flagging or markers shall be placed on the course not more than two weeks prior to the event and shall be removed within one week after conclusion of the event.

- b. **Limits:** The event shall be restricted to designated routes and limited to 500 rider participants per event. Participants shall not exceed 30 miles per hour through Category I and II tortoise habitat. They shall be notified of this requirement at the beginning of the event and before the start of the event on any subsequent days. Racing shall be prohibited.
- c. **Maps:** A map identifying the course shall be furnished to each entrant. The map shall clearly delineate maximum speed limits, authorized campsites, and desert wildlife management area, and shall include a statement cautioning that motorized travel beyond the edge of the roads into undisturbed habitat is strictly prohibited.
- d. **Parking:** Vehicles shall be parked at the side of the road or areas devoid of any perennial vegetation. Any entrants who abandon the event must exit the course on designated routes or public roads.
- e. **Camping:** Overnight camping shall be limited to existing campgrounds or designated campsites capable of accommodating a group. Selected camping areas shall be surveyed by a Qualified Biologist prior to the event to determine if desert tortoise burrows or other special status plant or animal species are present. Parking associated with vehicle-based camping must occur within 100' of centerline in wildlife management area units in previously disturbed areas, and within 300' of centerline in other tortoise habitat
- f. **Trash:** Trash and food items shall be removed from and carried out of the area by the participants. The event proponent shall be responsible for assuring that trash and garbage are not left behind.
- g. **Injury:** Injured tortoises found on the course shall be transported to an approved veterinarian (list provided to event organizers) at the earliest possible time. The proponent shall be responsible for the cost resulting from treatment of desert tortoises whose injuries resulted from the event.
- h. **Clearance:** The entire course within the wildlife management area shall be swept by an Authorized Biologist within an hour before the event, and in other desert tortoise habitat within 3 hours before the event. In addition, an Authorized Biologist shall travel at the front of the event to ensure that the route is cleared of all desert tortoises. Desert tortoises found shall be moved approximately 100 feet off the course by authorized personnel.



## 17. Utility Pipelines and Underground Cables

For construction and maintenance of all pipelines, fiber-optic lines, and other utilities requiring trenching, the following measures shall apply:

- a. **Width:** Construction rights-of-way shall be restricted to the narrowest possible width.
- b. **Exceptions :** All project construction and maintenance shall be restricted to the authorized right-of-way. If unforeseen circumstances require expansion beyond the right-of-way, the potential expanded work areas shall be surveyed for desert tortoises.
- c. **Access:** Vehicular travel shall be limited to the right-of-way. Access to the right-of-way shall be limited to public roads and designated routes. All temporary disturbances should be reclaimed immediately, as part of the project (see restoration below).
- d. **Trenches:** Open trenches shall be regularly inspected by the Authorized Biologist at a minimum of three (3) times per day, and any desert tortoises that are encountered shall be safely removed. For small projects, escape ramps are sometimes required. The length of the trench left open at any given time shall not exceed that distance which will remain open for one week or less in duration. A final inspection of the open trench segment shall be made by the Authorized Biologist immediately prior to backfilling. Arrangements shall be made prior to the onset of maintenance or construction to ensure that desert tortoises can be removed from the trench without violating any requirement of the Occupational Safety and Health Administration.
- e. **Maintenance:** Observations of desert tortoises or their sign during maintenance shall be conveyed to the field supervisor and a biological monitor. Employees shall be notified that they are not authorized to handle or otherwise move tortoises encountered on the project site.
- f. **Compliance:** Sufficient Authorized and Qualified Biologists shall be present during maintenance or construction activities to assist in the implementation of on-site mitigation measures for the desert tortoise and to monitor compliance. The appropriate number of biologists will depend upon the nature and extent of the work being conducted and shall be stated in the right-of-way grant for each particular action, after consultation with the specific resource area office authorizing the action.
- g. **Final Assessment:** The authorizing agency shall ensure that maintenance or construction activities are confined to the authorized work areas by means of a post-project assessment. The assessment may be conducted by the Authorized Biologist. If maintenance or construction activities have extended beyond the



flagged work areas, the BLM shall ensure that the project proponent restores these disturbed areas in an appropriate manner.

- h. **Restoration:** The proponent shall be required to restore disturbed areas in a manner that would assist re-establishment of biological values within the disturbed rights-of-way. Methods of restoration shall include, but not be limited to; road closure, the reduction of erosion, re-spreading of the top two to six inches of soil, planting with appropriate native shrubs, and scattering any bladed vegetation and rocks, where appropriate, across the right-of-way.

## 18. Power Transmission

The following mitigation measures shall be implemented during all construction and maintenance of transmission lines:

- a. **Surveys:** When access along the utility corridor already exists, pre-construction surveys for transmission lines shall provide 100 percent coverage for any areas to be disturbed and within a 100-foot buffer around the areas of disturbance. When access along the utility corridor does not already exist, pre-construction surveys for transmission lines shall follow standard protocol for linear projects.
- b. **Access:** To the maximum extent possible, access for transmission line construction and maintenance shall occur from public roads and designated routes.
- c. **Disturbed Areas:** To the maximum extent possible, transmission pylons and poles, equipment storage areas, and wire-pulling sites shall be sited in a manner that avoids desert tortoise burrows.
- d. **Restoration:** Whenever possible, spur and access roads and other disturbed sites created during construction shall be re-contoured and restored.
- e. **Ravens:** All transmission lines shall be designed in a manner that would reduce the likelihood of nesting by common ravens. Each transmission line company shall remove any common raven nests that are found on its structures. Transmission line companies must obtain a permit from the USFWS's Division of Law Enforcement to take common ravens or their nests.

## PROJECT REPORTING

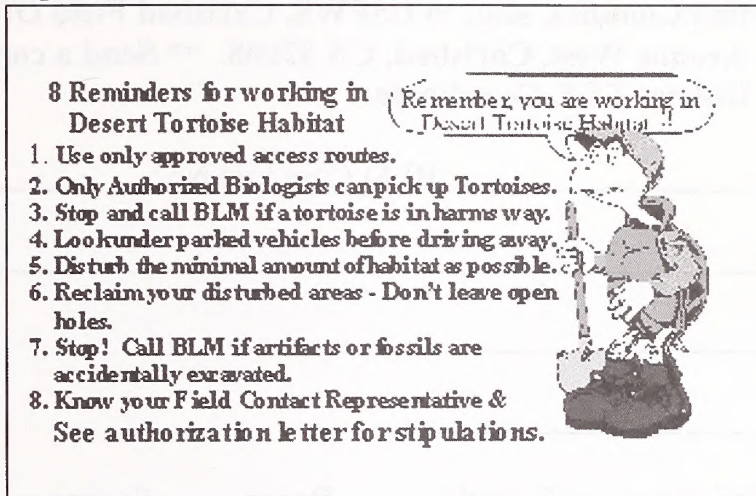
For each project on which the consultation is to be applied, the BLM will transmit a reporting form to the appropriate USFWS field office a minimum of 30 days prior to authorizing the activity. If there is no response after 30 days, the project may be approved.



Each Field Office will report to the California Desert District Office the actual acres disturbed, the number of tortoises moved, and the number of tortoises killed within 30 days of the completion of each project covered under this consultation. The California Desert District Office will report annually on these projects to the Ventura and Carlsbad field Offices of USFWS.

The BLM's California Desert District maintains a tabular and GIS record of all compensation acquisitions.

**Fig # A-1 Wallet Card**





**REPORT ON PROPOSED ACTION TO BE COVERED BY THE  
PROGRAMMATIC CONSULTATION ON ACTIVITIES  
RESULTING IN SMALL DISTURBANCES OF DESERT  
TORTOISE HABITAT IN THE CALIFORNIA DESERT**

**Authorization may not be issued until USFWS has 30 days for review and comment. For actions in Inyo, Kern, Los Angeles, and transmontane San Bernardino Counties, send to USFWS, Field Office Supervisor, 2493 Portola Road, Suite B, Ventura, CA 93003. For actions in Riverside, Imperial, and cismontane San Bernardino Counties, send to USFWS, Carlsbad Field Office Supervisor, 2730 Loker Avenue West, Carlsbad, CA 92008. \*\* Send a copy to BLM California Desert District T&E Coordinator.**

Name of Project: \_\_\_\_\_ BLM Case File No.: \_\_\_\_\_

Type of Activity: \_\_\_\_\_

BLM Contact: \_\_\_\_\_

Date of Preparation: \_\_\_\_\_

Location of Activity: Base Meridian \_\_\_\_ Township \_\_\_\_ Range \_\_\_\_ Section \_\_\_\_

General locality: \_\_\_\_\_

BLM Field Office: \_\_\_\_\_  
or other jurisdiction: \_\_\_\_\_

Tortoise Critical Habitat Unit: \_\_\_\_\_

Tortoise Recovery Unit: \_\_\_\_\_

BLM Tortoise Habitat Category (I, II, III): \_\_\_\_\_

Brief description of project (include site photographs, topographic map of location, and proposed construction dates):

---

---

---

Stipulations to be applied (list specific stipulation numbers from biological opinion):

---

---

---

---

---

---



# This Page Intentionally Left Blank







## Appendix B

### Implementation Plan

The purpose of this appendix is to define and clarify immediate and long-term commitments and priorities for plan implementation for the primary cooperating agencies. The array of tasks does not include monitoring tasks, which are addressed in specific species recovery strategies and guidance (Appendix A, Appendix F, Appendix I, Appendix J); nor is it necessarily exhaustive at this time. Tasks which are automatically required through regulation, NEPA review, application processing are not included (e.g., project mitigation, compensation, Section 7 project consultations under state and federal ESAs). Tasks are organized by subjects.

#### Land Use Planning

Task	Implementing Agency/Interest	Anticipated Timeframe
Amend land use plans	BLM – Incorporate plan decisions into the CDCA Plan and update/reprint CDCA Plan	3 years
Complete follow-up activity planning	BLM/USFWS, CDFG, local and other interests -- Amargosa vole/River ACEC mgt plan; Ibid above -- Amargosa Wild & Scenic River suitability recommendations; BLM/CNPS, USFWS -- Carson Slough ACEC mgt plan; BLM/USFWS, NPS -- Clark Mtn Burro Herd Mgt Area plan.	3 years
Change tortoise categories	BLM/USFWS	At the time of the ROD
Change critical habitat boundaries	USFWS/BLM	1 year
Hold implementation progress/action meetings	BLM,USFWS,CDFG – Utilize DAC to gather non-agency input	Annually
Incorporate applicable NEMO maps, coverages, and decisions into public maps and brochures and provide info to cooperators	BLM/USFWS, CDFG, Counties, CalTrans, NPS, DOD et. al.	1 year



**Standards for Public Land Health** (relates to monitoring)

<b>Task</b>	<b>Implementing Agency/Interest</b>	<b>Anticipated Timeframe</b>
Define assessment methods	<b>BLM/ALL</b>	Rangeland health assessment methodologies completed; Other methodologies will be adapted as needed from these, based on specific program needs and using the ecological principles of rangeland methodologies.
Complete assessments	<b>BLM, Others with expertise/ALL</b>	5-8 years

**DT Desert Wildlife Management Areas – General**

<b>Task</b>	<b>Implementing Agency/Interest</b>	<b>Anticipated Timeframe</b>
Track new surface disturbance using Geographic Info Systems	<b>BLM</b>	Annually by action
Develop Programmatic Rehabilitation Threshold Standards	<b>BLM, USFWS, CDFG/Other interests</b>	1 year
Assess & Track surface disturbance rehabilitation (add progress as GIS attribute: tracks net change)	<b>BLM, USFWS, CDFG/Other interests</b>	Assess by action, Annual tracking by action
Sign/Fence DWMA periphery	<b>BLM</b>	As needed
Amend fire management plan	<b>BLM</b>	2 years (initiate 1 <sup>st</sup> year)
Implement high priority items of raven control strategy, schedule implementation of other items.	<b>BLM, USFWS, CDFG/Other interests</b>	2 years (initiate 1 <sup>st</sup> year)
Transportation Access -Construct highway fencing	<b>CalTrans</b>	20 years for I-15, I-40 (see Appendix A for section priorities). Highway 95 - when upgrade to 4 lanes
Transportation Access - construct bridges, culverts	<b>CalTrans</b>	Highway 95 - when upgrade to 4 lanes
Retrofit existing large animal guzzlers to protect tortoise	<b>CDFG</b>	Completed
Create public education programs	<b>BLM</b>	5 years
Accomplish land tenure	<b>BLM/USFWS, CDFG, Local Communities</b>	As opportunities arise, including in conjunction with compensation actions.



**DT DWMA's – Cattle Leases**

<b>Task</b>	<b>Implementing Agency/Interest</b>	<b>Anticipated Timeframe</b>
Grazing decision to cancel Piute ephemeral allotment	<b>BLM</b>	1 year (to initiate), 2 years to complete by regulation
Voluntary relinquishment – remaining allotments with portions within DWMA's: Jean, Kessler Springs, Valley Wells, Valley View allotments	<b>Private parties</b>	Standing option
Grazing decision to combine adjacent remaining non-critical habitat allotments	<b>BLM</b>	1 year after termination of critical habitat portion of allotment (to initiate), if/when it makes sense, 2 years to complete.
Develop strategy to resolve cattle/ tortoise competition – allotments remaining, within DWMA's	<b>BLM, USFWS, Lessee</b>	1 year, allotment-specific.
Implement above forage competition strategy	<b>BLM, USFWS, Lessee</b>	2 years
Utilization/Competition Assessments	<b>BLM</b>	Annually
Adherence to Standards/Guidelines Assessment on Valley Wells Allotment	<b>BLM</b>	Annually, until upward trend established.
Retrofit cattle guards	<b>BLM</b>	3 years



**DT DWMA's – Burros**

<b>Task</b>	<b>Implementing Agency/Interest</b>	<b>Anticipated Timeframe</b>
Write Clark Mountain HMAP (Rewrite of East Mojave HMAP, specific to Clark Mountain HMA, with changes as identified in NEMO DEIS.)	<b>BLM, USFWS</b>	1 year
Map modified HMA boundaries with GPS and download on GIS. Groundtruth fencelines and other geographical markers where needed and any clarifications identified in Clark Mountain HMAP.	<b>BLM</b>	1 year
Establish census	<b>BLM</b>	Annually in DWMA until "substantial removal" is accomplished, or should standards not be met in an area; Once/2 years until AML achieved, Once/3 years thereafter except if standards are not being met.
Establish monitoring, utilizing public lands assessment process to support gathering excess burros and set final appropriate management level (AML) in Clark Mtns HMA	<b>BLM, USFWS</b>	2 years to develop assessment process; Focused implementation effort for 3 years. Regular updates thereafter on approved schedule.
Target date to set final AML	<b>BLM</b>	2006
Hold implementation progress/Action meetings	<b>BLM, USFWS/NPS, Other Interests</b>	Annual



**DT DWMA's – Route Designation**

<b>Task</b>	<b>Implementing Agency/Interest</b>	<b>Anticipated Timeframe</b>
Develop route-specific strategies for closed routes (strategies such as signing, barricading, rehabilitation, or combination to exclude access and allow the forces of nature to obliterate them) and limited routes (strategies such as signing, barricading, gating, and level of maintenance) based on specific issues driving closures or limitations.	<b>BLM, USFWS/All</b>	2 years
Develop local signing strategies: identify areas to be signed "open" and areas to be signed "closed" and determine how best to implement.	<b>BLM, USFWS, CDFG/All</b>	2 years
Implement routes of travel designations	<b>BLM</b>	4 years (closures, limited routes, signing, and rehabilitation, as needed not including ongoing maintenance)
Implement closures first (Those that are based on sensitive resource values such as raptor nests and flowing springs.)	<b>BLM</b>	Initiate 2nd year for highest priority closures.
Increase ranger/warden patrol during high public-use period	<b>BLM</b>	Seasonally as required
Post informational kiosks at major access points to DWMA's depicting access info including area route network, limitations, signing, resource protection info, visitor safety and locations to get more info.	<b>BLM</b>	Major access routes within 1 year, of route designation for an area, secondary access routes in 2nd or 3rd year or as funding permits.
Reprint Desert Access Guides (DAGs) and other printed media (brochures, maps) depicting basic recreational access network and area recreational opportunities.	<b>BLM, Cooperative Mapping Efforts</b>	Initiate 2nd year, Ongoing.
Create additional outreach programs to enhance knowledge of and reasons for designated route network, and to encourage compliance.	<b>BLM/ NPS</b>	5 years
Develop NEMO-specific criteria for route revisions to be evaluated within DWMA's by an interdisciplinary team, consistent with general 43 CFR criteria.	<b>BLM, USFWS, CDFG/ All Interests</b>	2 years



## Appendix B - Implementation Plan

### Amargosa Watershed Issues and Listed Species – Amargosa vole and Multi-species;

Task	Implementing Agency/Interest	Anticipated Timeframe
Implement Recommended Special Management Actions for Recovery of the Amargosa Vole (Appendix H of the NEMO DEIS)	<b>BLM/USFWS, CDFG</b>	Initiate in 1st year . These items will be implemented and/or will provide the foundation for Amargosa vole recovery strategy that will be in Amargosa River ACEC Plan.
Develop Strategy to Track Progress Towards Attaining T&E Recovery Goals	<b>BLM, USFWS, CDFG</b>	1 year for Amargosa vole, Other species as inventories dictate and mechanisms are set up
Display GIS map of the Amargosa River surface watershed and utilize existing and developing information of groundwater aquifers to display on GIS and map a model of area aquifer recharge.	<b>BLM-NARSC/USFWS, NPS, DOE, Other Interested Parties</b>	As part of 2nd year data collection for Amargosa River Suitability analysis and ACEC planning effort
Integrate Grimshaw Lake and Amargosa Natural Area ACEC Plans into the Amargosa River ACEC Plan, adding Amargosa vole critical habitat and Upper Amargosa source waters, and adopt or modify existing ACEC strategies to develop a watershed approach for the Amargosa River that responds to T&E species conservation and recovery needs and also recognizes the unique recreational values the Amargosa corridor offers.	<b>BLM Lead/All</b>	1 year to initiate, 2 years to collect any additional data, gather public input, and modify plan. This includes initiating a Plan Amendment for supplemental route designation.
Develop species inventory and monitoring plans, including identifying key travel corridors	<b>BLM/USFWS, CDFG, CNPS, Audubon, Others</b>	2 years for Amargosa vole, federally listed plants and neotropical migratory birds with known/reported nesting locations. As scheduled in Amargosa River ACEC Plan for other species.
Acquire private, SLC lands, as modified or implementing Amargosa River ACEC Plan Land Tenure Strategy and Inyo County policies.	<b>BLM, Local Communities of Inyo County</b>	Continue to pursue existing strategy. Upon adoption of the NEMO Plan, pursue modified strategy to be potentially refined in the Amargosa River ACEC Plan
Initiate Amargosa Wild & Scenic River Suitability Determination Analysis	<b>BLM/Local Inyo County Interests, Friends of the River, NPS, Others</b>	1 year to initiate, 2 years to collect data and develop suitability recommendations report
Accomplish identified Amargosa watershed, riparian restoration, and recreational corridor projects	<b>BLM</b>	10 years - Remove upstream and on-site tamarisk, develop additional habitat enhancements for listed and special status birds and fish, construct and upgrade trailheads and recreational trails, and develop interpretive plan.
Acquire water rights on public lands, consistent with the California Desert Protection Act and other utilizable authorities to maintain and reestablish riparian flow.	<b>BLM</b>	Initiate process immediately upon NEMO DEIS approval.



## Other Listed Species – Carson Slough T&amp;E Plants

<b>Task</b>	<b>Implementing Agency/Interest</b>	<b>Anticipated Timeframe</b>
Implement Recommended Special Management Actions for Recovery of the Ash Meadows Gumplant and Amargosa Niterwort (Ch 2.4.2.2 and App. G of the NEMO DEIS)	<b>BLM/USFWS, CDFG</b>	Initiate in 1st year . These items will provide the foundation for T&E plant recovery strategy that will be in Amargosa River ACEC Plan.
Develop species inventory, identify key habitat associations, and develop monitoring plans, including identifying populations at risk.	<b>BLM/USFWS, CNPS</b>	Identify highest priority risks immediately; 2 years to complete.
Construct exclosures or develop other appropriate measures to protect populations identified at risk during surveys. All populations above identified risk thresholds will have monitoring program to follow trends and identify need for more aggressive protection strategies if/when passive strategies are used initially.	<b>BLM/ USFWS, CNPS</b>	Initiate 1st year.
Develop Strategy to Track Progress Towards Attaining T&E Recovery Goals	<b>BLM, USFWS, CDFG</b>	As inventories dictate and mechanisms are set up.
Administratively change the Appropriate Management Level (AML) for wild horses and burros from 28 to 12 horses and 28 to 0 burros.	<b>BLM</b>	With the ROD for NEMO DEIS
Acquire water rights on public lands, consistent with the California Desert Protection Act and other utilizable authorities to maintain and reestablish riparian flow.	<b>BLM</b>	Initiate process immediately upon plan approval.
Develop/map wetland habitat and soils inventory for Amargosa River ACEC planning effort, such as key ephemeral wetland patches, mesquite bosques, and undisturbed desert pavement areas.	<b>BLM/USFWS, CDFG, Other Interests</b>	2 years, use information from T&E species inventory to identify key habitat components on which to refocus efforts.
Designate routes of travel in the Carson Slough area	<b>BLM/Inyo County, All</b>	Initiate 1 <sup>st</sup> year. Complete in 3 years (designations and any closures, signing, rehab in conjunction with Amargosa River ACEC planning)
Develop guidelines for road construction and other surface disturbing activities adjacent to T&E plant populations	<b>BLM, USFWS/Inyo County, Mining Interests, Other Interests</b>	2 years, Adopt in the Amargosa River ACEC :Plan.



**Other BLM-Sensitive Species – Bats**

<b>Task</b>	<b>Implementing Agency/Interest</b>	<b>Anticipated Timeframe</b>
Sensitive bat roosts inventory, including identifying key maternity roosts	<b>BLM</b>	Initiate in 1st year, 3 years
Implement routes of travel designations in the Silurian Hills area utilizing bat roost data collected.	<b>BLM/All</b>	Initiate in 2nd year for at risk maternity roosts. Complete in 5 -8 years (designations and any seasonal or other closures, signing, route rehab).
Construct additional bat gates or other adit access control devices at key bat use sites.	<b>BLM</b>	As Needed
Develop programmatic mitigation strategies for active mining operations and reclamation strategies for active and inactive mining operations to preserve potential for bat use.	<b>BLM/USFWS, Mining Operations</b>	3 years.
Adapt mining programmatic mitigation strategies for other activities that may impact bats or bat habitat, particularly maternity roosts.	<b>BLM/USFWS, Mining Operations</b>	4 years.

**DWMAs, Other T&E, Community Expansion, & Wilderness – Land Tenure Adjustment**

<b>Task</b>	<b>Implementing Agency/Interest</b>	<b>Anticipated Timeframe</b>
Implement Land Tenure Strategy as outlined in Appendix T of the NEMO DEIS.	<b>BLM</b>	Overall long-term, as identified in the NEMO DEIS for T&E species or as specific land tenure requests are received within the overall framework.
Track land tenure requests and progress by method (add progress as GIS attribute: track net change in land tenure for areas identified for acquisition or disposal)	<b>BLM</b>	Annually, by action



## APPENDIX C

### DESCRIPTION AND STRATEGY FOR ADDRESSING MAJOR DESERT TORTOISE ISSUES

The following tables describe 18 issues (listed below) in desert tortoise conservation. These issues are regarded as significant in the range of the tortoise, but many are relatively unimportant at this time in tortoise management in the Northern and Eastern Mojave Planning Area. The issues are generally the result of conflicting human uses (e.g, cattle grazing, mineral extraction, vehicle access), natural processes that have strong human influences (e.g., fire, disease, subsidized predation), and management activities (e.g., monitoring, wildlife management).

For each table there is a description of the current situation; this is largely a summary of information in “Current Desert Tortoise Management Situation in BLM-Administered Lands Portion of Northern and Eastern Mojave Planning Area (Foreman, 1998)”. The description applies to only BLM-administered lands in the NEMO Planning Area.

The potential effects of the issue on desert tortoise populations are also described. For conflicting activities the effects focus on those that will influence tortoise population density and distribution.

Lastly, the management strategy developed for the NEMO Planning Area is presented. For brevity, the strategy and rationale reflect only the preferred alternative. A brief summary of the Desert Tortoise Recovery Plan recommendations are presented for comparison. Following is a list of the 18 issues addressed:

- Urbanization and Agricultural Development
- Military Operations
- Cattle Grazing
- Wild Horses and Burros
- Mineral Extraction
- Utilities and Other Rights-of Ways and Permits
- General Recreation
- Recreational Vehicle Riding/Competitive Events
- Vehicle Access
- Vandalism and Collecting
- Vegetation Harvesting
- Wildlife Management
- Subsidized Predation
- Disease
- Fire
- Alien Plants
- Drought
- Monitoring



<b>ISSUE: Urbanization and Agricultural Development</b>	
<b>Scope of Issue:</b> This issue includes residential, commercial (e.g., stores and gas stations), industrial (e.g., power plants), and agricultural development.	
<b>Current Situation</b>	
<b>Current Situation in NEMO Planning Area:</b> Most residential development is focused around the small towns of Needles, Baker, and Kelso; only Kelso is near a current or proposed tortoise DWMA. Commercial development occurs at these towns and at other small service areas such as Essex, Chambliss, Goffs, Ivanpah, Cima, and various Interstate Highway exits; development at these sites is generally limited to a few buildings and a few acres. Housing and services associated with the MolyCorp Mine at Mountain Pass are larger but are above than significant tortoise habitat. Recent development around and near Primm (Stateline), Nevada, has resulted in a golf course and increased recreational use in northern Ivanpah Valley, within BLM Category I tortoise habitat and near critical habitat. There is virtually no agricultural development in or near important tortoise habitat, but interest has been expressed for some development in northern Piute Valley, which is critical habitat.	
<b>Effects</b>	
<b>Primary Effects:</b> Where it occurs within tortoise habitat, there is a direct loss and alteration of habitat value as plant cover is removed and compaction of soils occurs. Illegal trash dumping (see Issue: Landfills and Waste Sites) around towns and residences as well as agricultural crops and irrigation water also artificially subsidize raven populations (also see Issue: Subsidized Predation).	
<b>Other Effects:</b> Tortoises may be killed directly by vehicles or dogs. Developments may promote introduction and spread of alien plants.	
<b>Information Needs:</b> There is a need for additional research on the urban/wildland interface and ecological effects there.	
<b>Strategy</b>	
<b>Strategy in Preferred Alternative for Addressing Issue:</b> Cumulative new surface disturbing projects on BLM lands in each tortoise DWMA would be limited to 1 percent of BLM lands in that area. The size of each project would be minimized, and other mitigation measures would be applied to limit effects. Compensation would assist in accomplishing other tortoise conservation objectives (e.g., land acquisition, habitat rehabilitation). No vegetation harvesting would be allowed in tortoise DWMA's. Land acquisitions in DWMA's would assist in limiting negative effects. Lands will not be available for disposal under various land disposal laws (e.g., agricultural land laws, recreation and public purposes, FLPMA leases and sales, and airports).	
<b>Rationale for Selected Strategy:</b> Much of the residential, commercial, industrial, and agricultural development will occur on private inholdings. Therefore, land acquisition efforts in key areas and retention of existing lands may help limit the effects of these activities. Otherwise, control of these activities by BLM is negligible and is primarily limited to mitigation measures applied to local utilities.	
<b>Recovery Plan Recommendations:</b> No agricultural clearing would be allowed in tortoise DWMA's. New surface disturbances that diminish tortoise habitat value would be prohibited. Uncontrolled dogs out of vehicles would be prohibited. Fencing would be added around Ivanpah Dry Lake and Stateline to keep vehicles out of the DWMA. DWMA boundaries would be signed around Nipton and other settlements.	



## ISSUE: Military Operations

**Scope of Issue:** This issue includes activities on military bases and temporary operations off of bases. Also included are low-level aircraft flyovers.

### Current Situation

**Current Situation in NEMO Planning Area:** There are currently no military installations or bases in the NEMO Planning Area. One alternative for the proposed expansion of Ft. Irwin would be eastward into Silurian Valley. This area is not in critical habitat or in a proposed tortoise DWMA.

### Effects

**Primary Effects:** Tank maneuvers during World War II and in 1964 disturbed significant areas of the desert, including training areas in Piute Valley. The residual effects of crushing of vegetation and the compaction of soil remain after 50 years. However, no new military operations within tortoise DWMA's are expected to occur.

**Other Effects:** Even though toxic substances are suspected as a causative agent for tortoise shell diseases, the effects of fuel and chemical spills associated with military activities, if any, are unknown.

**Information Needs:** The relationship between shell diseases and various toxic substances, if any, needs to be determined.

### Strategy

**Strategy in Preferred Alternative for Addressing Issue:** No new military activities are expected for the DWMA's.

**Rationale for Selected Strategy:** Military maneuvers would be incompatible with tortoise conservation.

**Recovery Plan Recommendations:** Military maneuvers that disturb habitat would be prohibited in tortoise DWMA's.



<b>ISSUE: Cattle Grazing</b>
<b>Scope of Issue:</b> This issue includes only cattle grazing; there is no sheep grazing in the NEMO Planning Area.
<b>Current Situation</b>
<b>Current Situation in NEMO Planning Area:</b> About 114,500 acres of BLM land in the Piute Valley Allotment are in the Piute-El Dorado Critical Habitat Unit. About 137,100 acres of BLM land in the Valley Wells, Jean Lake, Valley View, and Kessler Springs Allotments are in the Ivanpah Critical Habitat Unit. All allotments except Piute Valley are perennial/ephemeral; Piute Valley is ephemeral only. A programmatic biological opinion on cattle grazing in the CDCA specifies interim terms and conditions for mitigating cattle grazing effects on desert tortoise. These measures specify minimum forage utilization levels, limit grazing seasons for Jean Lake and Valley Wells Allotments, and restrict grazing areas in Valley View, and Piute Valley Allotments.
<b>Effects</b>
<b>Primary Effects:</b> In years of low annual plant production, cattle can compete with tortoises for food. There is forage overlap even in years of abundant forage, but there is probably no competition in these years. It is likely that past cattle grazing has altered the perennial plant composition. Cattle can trample and kill or injure tortoises or trample tortoise burrows, destroying the burrow and possibly entombing a live tortoise. The introduction and spread of alien grasses in the Planning Area may be partially due to cattle grazing.
<b>Other Effects:</b> Hoof action may also increase compaction and reduce ground cover resulting in increased erosion and decreased water infiltration; effects are most severe around troughs and corrals and less severe in lightly grazed areas further from water. An overall reduction in perennial plant cover from grazing may reduce tortoise cover sites and may alter soil temperature regimes both for plants and tortoises.
<b>Information Needs:</b> The effect of grazing under varying stocking rates needs further analysis. Additional information on the effects of cattle grazing on cryptogamic crusts is needed.
<b>Strategy</b>
<b>Strategy in Preferred Alternative for Addressing Issue:</b> Grazing allotments would be retired at the request of the lessees (e.g., a conservation buyer). The terms and conditions of the interim biological opinion would be adopted as permanent grazing stipulations. No ephemeral authorizations would be made; ephemeral-only allotments (i.e., Piute Valley) would be deleted. In years of low ephemeral forage production, cattle would be substantially removed from the tortoise DWMA. No temporary non-renewable perennial authorizations would be made in tortoise DWMA.
<b>Rationale for Selected Strategy:</b> The strategy continues the strong mitigation measures currently in place. In addition, it allows the elimination of current grazing operations to promote tortoise conservation if a conservation buyer desires it. It also reduces potential competition between cattle and tortoises in dry years.
<b>Recovery Plan Recommendations:</b> The Recovery Plan recommends the complete elimination of cattle grazing in tortoise DWMA.



<p><b>ISSUE: Wild Horses and Burros</b></p>
<p><b>Scope of Issue:</b> Only burros, and no wild horses, occur in tortoise habitat in the Planning Area.</p>
<p><b>Current Situation</b></p>
<p><b>Current Situation in NEMO Planning Area:</b> The Clark Mountain Herd Management Area was designated in the CDCA Plan for retention of burros. The appropriate management level (AML) was set at 44; current populations are at about 150 burros after a recent removal of about 150. The Clark Mountain HMA includes about 85,000 acres (13%) of the Ivanpah Critical Habitat Unit. The Dead Mountains Herd Management Area as designated for no retention of burros. The AML was set at 0, but about 30 burros occur there now. The Dead Mountains HMA includes about 6,600 acres (1%) of the Piute-El Dorado Critical habitat Unit.</p>
<p><b>Effects</b></p>
<p><b>Primary Effects:</b> Impacts are presumably similar to those described for cattle grazing; however, there are no studies describing the impacts on desert tortoise.</p>
<p><b>Other Effects:</b> Presumably similar to those described for cattle grazing.</p>
<p><b>Information Needs:</b> Information on the preferred foods of burros and on potential forage competition with desert tortoise at varying burro stocking rates is needed.</p>
<p><b>Strategy</b></p>
<p><b>Strategy in Preferred Alternative for Addressing Issue:</b> In the Clark Mountain HMA, the burro population would be moved to the eastern part of the HMA out of the tortoise DWMA. The AML would be increased to 60, and habitat would be monitored to adjust the AML in the future. Burros would be removed entirely from the Dead Mountains HMA. A monitoring strategy would be developed to assess burro population distribution.</p>
<p><b>Rationale for Selected Strategy:</b> Impacts of competition, especially in years of low annual production, and trampling would be eliminated.</p>
<p><b>Recovery Plan Recommendations:</b> The Recovery Plan recommends the complete elimination of burros from tortoise DWMA.</p>



<b>ISSUE: Mineral Extraction</b>	
<b>Scope of Issue:</b> This issue includes all mineral resource classifications - metallic, industrial, construction, and energy. It includes all mineral disposal classifications - locatable, leasable, and salable.	
<b>Current Situation</b>	
<b>Current Situation in NEMO Planning Area:</b> Those portions of the Planning Area within wilderness are withdrawn from mineral entry excepting valid existing rights; new leases and sales are not allowed in wilderness. About 44,000 acres of critical habitat in the Planning Area are in five wilderness areas. For mineral exploration and small mining operations under 10 acres, the BLM has received from USFWS a programmatic biological opinion. It gives terms and conditions for mitigating and compensating impacts on desert tortoise. For larger operations, project-specific stipulations are developed through consultation with USFWS. There are currently no active mining claims in critical habitat in the NEMO Planning Area. There are 118 inactive (mostly small and historic) mining operations in critical habitat (16 in Piute-El Dorado and 102 in Ivanpah Critical Habitat Units). Most large mining operations are in mountains (e.g., Mountain Pass Mine, Colosseum Mine, Morning Star Mine), but access may cross critical tortoise habitat. Although there was once some interest in oil and gas exploration in Ivanpah Valley, interest is now very low. Waste spills from Mountain Pass Mine have resulted in habitat loss for clean-up and monitoring well fields.	
<b>Effects</b>	
<b>Primary Effects:</b> Exploration activities may disturb or crush small amounts of habitat, commonly less than an acre. Mining development commonly disturbs more habitat and results in removal of vegetation and disturbance of soils. Reclamation of modern mine sites is often better than other disturbances due to growing of nursery plants, replacement of topsoil, and irrigating. Vehicles on access roads to mine sites or off-road in exploration may run over and kill or injure tortoises.	
<b>Other Effects:</b> In larger operations, residential development may occur (See Issue: Urbanization and Agricultural Development). Access roads may fragment populations. Toxins emitted through fugitive dust or spills may contaminate large areas; the effects are not well understood but are implicated in shell diseases.	
<b>Information Needs:</b> The relationship between shell diseases and various toxic substances, if any, needs to be determined. Restoration techniques need refinement.	
<b>Strategy</b>	
<b>Strategy in Preferred Alternative for Addressing Issue:</b> Cumulative new surface disturbing projects on BLM lands in each tortoise DWMA would be limited to 1 percent of BLM lands in that area. The size of each project would be minimized, and other standard mitigation measures would be applied. Compensation would assist in accomplishing other tortoise conservation objectives (e.g., land acquisition, habitat rehabilitation). No additional withdrawals are proposed. Changes to Class L would necessitate plans of operation even for small mines. Sale of materials at new or expanded pits would be allowed.	
<b>Rationale for Selected Strategy:</b> Large-scale mining operations are not anticipated in the DWMA in the NEMO Planning Area. Small mining operations are small and usually temporary, and existing mitigation techniques are sufficient. Oil and gas development in Ivanpah Valley would be discretionary.	
<b>Recovery Plan Recommendations:</b> Ivanpah Valley would be withdrawn from mineral entry and leasing. Mining would be allowed if carefully mitigated. New surface disturbing activities that significantly diminish tortoise habitat value would be prohibited.	



<b>ISSUE: Utilities and Other Rights-of-Ways and Permits</b>	
<b>Scope of Issue:</b> This issue includes Utility Corridors designated in the CDCA Plan and the resulting transmission facilities and service roads. It includes construction of new facilities and maintenance of existing facilities. Also included are various permitted activities such as filming and apiary sites.	
<b>Current Situation</b>	
<p><b>Current Situation in NEMO Planning Area:</b> Utility Corridors D and BB cross the Ivanpah Critical Habitat Unit, and Corridors E and R cross the Piute-El Dorado Critical Habitat Unit. Even though about 112,500 acres of critical habitat are in these corridors, the actual acreage occupied by utilities is much smaller. Each corridor includes electric transmission lines, pipelines, and fiber-optic cables. Some utilities occur outside the corridors, but no additional facilities can be constructed alongside them. All utilities have service roads. Mitigation and compensation measures are applied to both construction and maintenance activities. Restoration has been poor, especially for pipelines. The BLM has programmatic biological opinions covering the maintenance of most utility systems. There is increasing demand for communication sites. Most of these are located on high points outside of critical habitat, and acreage disturbed is small but permanent. There are few requests for other special use permits in the Planning Area.</p>	
<b>Effects</b>	
<p><b>Primary Effects:</b> Habitat loss in construction is often severe. Fiber-optic cables have often been placed in or along service roads. Pipeline construction can denude large strips up to 200 feet wide, and habitat restoration is very slow with current methods. Direct mortality during construction can occur and was very high on at least one pipeline project. Direct mortality can also occur in utility inspection and repair.</p> <p><b>Other Effects:</b> Service roads increase human access with impacts associated with various legal and illegal activities. Transmission towers create nesting and perhaps foraging perches for ravens that prey on hatchling and juvenile tortoises.</p> <p><b>Information Needs:</b> Site restoration techniques need to be improved. The effects of utilities on raven predation and methods for reducing it are not well known.</p>	
<b>Strategy</b>	
<p><b>Strategy in Preferred Alternative for Addressing Issue:</b> Existing utility corridors would be retained, and new utilities would be placed within them. Cumulative new surface disturbing projects on BLM lands in each tortoise DWMA would be limited to 1 percent of BLM lands in that area. The size of each project would be minimized, and other standard mitigation measures would be applied to limit effects. Compensation would assist in accomplishing other tortoise conservation objectives (e.g., land acquisition, habitat rehabilitation).</p> <p><b>Rationale for Selected Strategy:</b> The effects of utilities on tortoise conservation and other resources would be restricted to existing, discrete locations.</p> <p><b>Recovery Plan Recommendations:</b> New access would not be developed in DWMA's. Disturbed areas would be restored to pre-disturbance condition. New surface disturbing activities that diminish tortoise habitat value would be prohibited. Fencing with underpasses would be constructed along the Union Pacific Railroad.</p>	



<b>ISSUE: General Recreation</b>	
<b>Scope of Issue:</b>	This issue includes hunting, shooting, nature study, rock collecting, rock climbing, recreational touring, and other activities. Camping is not included (see Issue: Access), and motorcycle riding and competitive events are not included (see Issue: Riding and Competitive Events).
<b>Current Situation</b>	
<b>Current Situation in NEMO Planning Area:</b>	Almost all recreation in the desert includes a vehicle as a means of accessing a remote area. BLM lands are generally available for all forms of such destination recreation. Wilderness areas are available only for non-mechanical recreation and activities with low user density and low impacts by foot or horseback. Various public education outreach programs and printed materials have been developed to promote, enhance, and direct recreational opportunities and to gain visitor compliance with conservation of resources. Recreation use in tortoise critical habitat in the Planning Area is relatively low and widely dispersed compared with other desert areas. There are no developed campgrounds in or near critical habitat.
<b>Effects</b>	
<b>Primary Effects:</b>	Legal recreational activities probably have little or no effect on desert tortoise. Illegal activities such as shooting or collecting tortoises may have seriously reduced populations in some areas (see Issue: Vandalism and Collecting). Evidence for shooting and the low level of recreation use indicate that these illegal activities are not significant in the NEMO Planning Area.
<b>Other Effects:</b>	None.
<b>Information Needs:</b>	No significant needs.
<b>Strategy</b>	
<b>Strategy in Preferred Alternative for Addressing Issue:</b>	General recreational activities would be allowed. Public education programs and ranger contacts would be continued and increased.
<b>Rationale for Selected Strategy:</b>	Impacts, if any, are not significant. General recreation is widely dispersed and has low impacts usually associated with access.
<b>Recovery Plan Recommendations:</b>	General non-consumptive (e.g., hiking, horseback riding) recreational activities would be allowed. Discharge of firearms except for hunting from September through February would be prohibited. New visitor centers, campgrounds, and other visitor facilities would be allowed where appropriate. An environmental education program would be developed.



## ISSUE: Recreational Vehicle Riding and Competitive Events

**Scope of Issue:** This issue include motorcycle riding on routes, organized motorcycle trail-riding events , and competitive speed events.

### Current Situation

**Current Situation in NEMO Planning Area:** Competitive speed events may be allowed on approved routes of travel by permit. In multiple-use class L, only short distances and no start, finish, pit, or spectator areas are allowed. Occasionally, motorcycle trail-riding events have been permitted in critical habitat; the BLM has a programmatic biological opinion from USFWS covering such events. These events are few, and they are permitted only in the winter. The CDCA Plan designated one long-distance, point-to-point, competitive event corridor through what is now critical habitat. This "Barstow-to-Vegas" Corridor passes through the Ivanpah Critical Habitat Unit (in Shadow Valley). No race has been authorized in the Corridor for many years due to the listing of the desert tortoise and issues of competitor and spectator compliance. There are no off-highway vehicle free-play areas in the NEMO Planning Area.

### Effects

**Primary Effects:** Vehicles, especially those in speed events, can run over and kill or injure tortoises. Organized trail rides have stipulations to reduce the likelihood of tortoise mortalities. In speed events, vehicles often leave the traveled portion of the course resulting in route-widening, vegetation loss, crushing of tortoises and burrows, increased compaction, loss of soil and nutrients, and destruction of cryptogamic crusts. Compaction of soils reduces water absorption, increases surface temperatures, and increases the difficulties in digging burrows. Destruction of vegetation reduces tortoise protection from predators and weather and reduces annual plant habitat suitability and productivity. When winds are moderate to high, racers leave the marked course entirely to avoid wind-blown dirt.

**Other Effects:** The spread of alien plants is aided by surface disturbance and, possibly, fugitive dust along route edges. New disturbance may destroy cryptogamic crusts that are important in reducing erosion, controlling water infiltration, regulating soil temperatures, fixing atmospheric nitrogen, pre-adapting soils for plant growth, and accumulating organic matter.

**Information Needs:** Additional information is needed on the effects of toxins from vehicle exhaust. The effects of increases in fugitive dust on cryptogamic crust, soil nutrient content, and annual plant production are not known.

### Strategy

**Strategy in Preferred Alternative for Addressing Issue:** No competitive events would be allowed in tortoise DWMA's. Organized trail-riding events would be allowed outside the tortoise season with standard mitigation measures applied. No cross-country travel would be allowed.

**Rationale for Selected Strategy:** The negative effects of competitive events are incompatible with tortoise conservation. Effects of organized trail-riding events, properly stipulated (e.g., only between November 1 and March 1, pre-event sweep and lead rider, 500 riders maximum), are similar to other vehicle use of routes.

**Recovery Plan Recommendations:** Competitive and organized events would be prohibited in DWMA's. No cross-country travel would be allowed. Fencing would be added around Ivanpah Dry Lake and Stateline area to keep vehicles out of the DWMA's. DWMA boundaries would be signed around Nipton and other settlements.



<b>ISSUE: Vehicle Access</b>	
<b>Scope of Issue:</b>	This issue includes legal use of authorized routes of travel on the public route network and on State and Federal Highways. It also includes stopping, parking, and camping along these routes. It does not include use of utility service roads or access to permitted activities, such as mining.
<b>Current Situation</b>	<b>Current Situation in NEMO Planning Area:</b> Wilderness areas have no general access by the public. Outside of wilderness, legal routes of travel on public lands include all existing routes and all washes showing signs of use. Route density is low relative to other desert areas. Stopping, parking, and camping on public lands is allowed within 300 feet of any route of travel. No BLM routes in tortoise habitat are paved. Most routes are maintained by repeated use; a few are maintained by blading. A few paved State and Federal highways pass through tortoise critical habitat - Interstate 40, Highway 95, and Goffs Road in the Piute-EI Dorado Critical Habitat Unit and Interstate 15, Excelsior Mine Road, and Nipton Road in the Ivanpah Critical Habitat Unit. Some of these carry very heavy traffic.
<b>Effects</b>	<p><b>Primary Effects:</b> Tortoise can be crushed or injured by vehicles on roads. On paved highways where vehicle speeds and traffic volume are high, virtually no tortoise may pass over the highway. Tortoise populations are severely depressed for at least 0.5 to 1 mile along heavily used highways. This not only reduces tortoise overall populations, but fragments the populations.</p> <p><b>Other Effects:</b> Toxins emitted from vehicle exhaust may be a causative agent for shell diseases. Highways also serve as dispersal corridors for alien plants. Roadkills of reptiles and mammals serve as raven food, thereby artificially subsidizing the populations of an important tortoise predator (see Issue: Subsidized Predation). Fires occur most commonly along paved highways; fires promote alien plants, decrease native perennial cover, and kill tortoises (see Issue: Fire).</p> <p><b>Information Needs:</b> The effects of varying levels (i.e., light to heavy) of vehicle use of routes on desert tortoise populations is not understood. The effects of legal and illegal activities at campsites along routes (e.g., collecting, vandalism of tortoises, trash, pets) is not known. The effects of toxins in vehicle exhaust is not well understood.</p>
<b>Strategy</b>	<p><b>Strategy in Preferred Alternative for Addressing Issue:</b> All routes in tortoise DWMMAs would be designated open, closed, or limited use. Closed routes would be rehabilitated. Interstate highways and other heavily traveled, paved highways through tortoise DWMMAs (i.e., I-15, I-40, Highway 95, Nipton Road) would be fenced to exclude tortoise access. Culverts to allow passage across these highways would be provided. Stopping, parking, and camping would be allowed only within 100 feet of route centerline or within banks of wash.</p> <p><b>Rationale for Selected Strategy:</b> The CDCA Plan calls for the designation of routes on public lands throughout the CDCA. Fencing of highways has been shown to greatly reduce the mortality of tortoises and other reptiles and mammals.</p> <p><b>Recovery Plan Recommendations:</b> Routes of travel would be designated individually. Fencing and culverts would be required along most paved highways (i.e., I-15, I-140, Highway 95) in critical habitat. Parking and camping would be restricted to designated sites. Speeds would be limited on designated routes.</p>



<b>ISSUE: Vandalism and Collecting</b>	
<b>Scope of Issue:</b>	This issue refers to the illegal harming or collecting of desert tortoises. It does not include the authorized handling of tortoises to remove tortoises from a hazardous site as project mitigation.
<b>Current Situation</b>	
<b>Current Situation in NEMO Planning Area:</b>	Although tortoises are sometimes shot, the incidence of gunshot is very low in the NEMO Planning Area. Tortoises are collected for pets and for cultural observances. The amount of collecting and its significance is unknown, but the high number of tortoises in captivity implies that collecting is common. However, it is believed to be minimal in the NEMO Planning Area due to remoteness.
<b>Effects</b>	
<b>Primary Effects:</b>	Both collecting and vandalism remove tortoises from the population. Any such artificial mortality is potentially significant due to the tortoise's very low reproductive capacity.
<b>Other Effects:</b>	In some areas where tortoises are sought by immigrants for cultural observances, burrows are destroyed in large numbers in the search for tortoises. This potentially exposes tortoises to increased predation and exposure to other natural elements.
<b>Information Needs:</b>	There is no information on the amount of tortoise collecting occurring or its relative significance compared to other mortality factors.
<b>Strategy</b>	
<b>Strategy in Preferred Alternative for Addressing Issue:</b>	Hunting would be permitted according to State regulation. Public education and law enforcement would be increased.
<b>Rationale for Selected Strategy:</b>	Vandalism and collecting are believed to be relatively small in the Planning Area.
<b>Recovery Plan Recommendations:</b>	Discharge of firearms, except for gamebird and big game hunting would be prohibited in the DWMA's. An environmental education program would be developed. Law enforcement would be increased to reduce illegal activities.



<b>ISSUE: Vegetation Harvesting</b>	
<b>Scope of Issue:</b>	This issue includes the authorized sale and illegal harvesting of whole plants or plant parts.
<b>Current Situation</b>	<b>Current Situation in NEMO Planning Area:</b> A permit is required in the CDCA for all vegetation harvesting except dead-and-down wood for campfire use. According to current BLM instructions in the CDCA, only creosote stems or salvage plants may be sold until an environmental assessment is prepared (none have been prepared for the NEMO Planning Area). Only salvage from areas to be disturbed is currently considered and only if the plants are not needed for project restoration. Some illegal harvesting of Mojave yucca and barrel cactus has occurred in the Piute and Fenner Valleys.
<b>Effects</b>	<b>Primary Effects:</b> Sales of plant parts for the floral industry if properly mitigated and restricted should have little or no effect on vegetation resources or desert tortoise. Commercial harvesting of yuccas can reduce bird populations. Illegal harvesting can eliminate key tortoise forage species, such as cactus. <b>Other Effects:</b> Illegal harvesting usually involves illegal cross-country travel by trucks that damage habitat. <b>Information Needs:</b> None.
<b>Strategy</b>	<b>Strategy in Preferred Alternative for Addressing Issue:</b> Increased law enforcement would attack illegal harvesting. Permits for vegetation harvesting would be limited to salvage projects. Collection of dead-and-down wood (except Joshua trees and other yuccas) for personal campfire use would be allowed. <b>Rationale for Selected Strategy:</b> The floral industry's needs for plant parts can be met in other areas. Commercial harvesting (e.g., yucca) has undesirable, negative effects on wildlife. <b>Recovery Plan Recommendations:</b> No vegetation harvesting would be allowed except by permit (currently required throughout CDCA).



ISSUE: Wildlife Management	
Scope of Issue:	This includes various activities or habitat facilities (e.g., small game guzzlers) to enhance or stabilize wildlife (especially upland gamebird) populations.
Current Situation	
Current Situation in NEMO Planning Area:	There are numerous small game guzzlers in tortoise habitat in the NEMO Planning Area. Most, if not all, have been modified so that animals, including tortoises, do not become entrapped.
Effects	
Primary Effects:	Tortoises can become entrapped and die due to plastic entry/exit ramps that are too slick.
Other Effects:	Tortoise predators, such as coyote and common raven, can drink from the guzzlers. Where water limits these predators, their populations could be enhanced leading to increased tortoise predation (see Issue: Subsidized Predation). Cameras at guzzlers in the southern Colorado Desert have shown that many species use guzzlers; though present in that area, raven use has not been recorded. Ravens are known to use cattle troughs in the NEMO Planning Area.
Information Needs:	Additional information is needed on the use of small game guzzlers by coyotes and ravens and on the effects on their populations.
Strategy	
Strategy in Preferred Alternative for Addressing Issue:	Modify all small game guzzlers to facilitate exit by tortoises.
Rationale for Selected Strategy:	The strategy addresses the known problem.
Recovery Plan Recommendations:	Guzzlers and other wildlife facilities would be allowed. Enhancement of native gamebird populations would be allowed.



<b>ISSUE: Subsidized Predation</b>	
<b>Scope of Issue:</b>	This issue includes the predation of tortoises by predators whose populations are subsidized, and thereby elevated, by human activities that provide food or other essential habitat elements. Major predators include common ravens, coyotes, and domestic or feral dogs.
<b>Current Situation</b>	
<b>Current Situation in NEMO Planning Area:</b>	Raven populations are somewhat elevated in the NEMO Planning Area, but not as much as the West Mojave. Raven numbers around Stateline near the Ivanpah Critical Habitat Unit are likely to continue to increase with development there. Little is known about coyote populations in the Planning Area. Feral and domestic dogs are not known to be a problem in the NEMO Planning Area. The only authorized solid waste landfills are local operations at Baker and Needles; both are some distance from critical habitat. Unauthorized public and open community dumps exist at eight sites, all near critical habitat. Some of these have been closed, and efforts are underway to close the remaining in favor of regional landfills. Roadkills, especially on well-traveled paved roads (e.g., Interstate Highways 15 and 40 and State Highways 66 and 95), provide food for ravens and coyotes. Multiple transmission line systems are present in all utility corridors in both the Ivanpah and Piute-El Dorado Critical Habitat Units; raven use of these towers for nesting has been documented.
<b>Effects</b>	
<b>Primary Effects:</b>	The subsidizing of tortoise predator populations results in increased mortality to tortoises, especially to hatchling and juvenile tortoises less than 100 mm in length (usually less than 7 years of age). Both ravens and coyotes are known to forage at dumps and landfills, especially those where trash is not covered properly. Roadkills similarly provide food for predators; most relevant information is from highway fencing studies. The incidence of nesting on transmission towers in the NEMO Planning Area occurs at a low level.
<b>Other Effects:</b>	None.
<b>Information Needs:</b>	The relationship between raven populations that actually forage at landfills and dumps and those that prey on tortoises away from these sites is not well understood. The movements of ravens on a daily and seasonal basis (i.e., migratory behavior) is not known. Although highway fencing studies have quantified roadkills on some highways, the utilization by and importance of these roadkills to predators on heavily traveled highways is not known.
<b>Strategy</b>	
<b>Strategy in Preferred Alternative for Addressing Issue:</b>	No new landfills would be authorized by BLM in the DWMAs. Existing unauthorized dumps would be closed and reclaimed. The BLM would participate in regional raven depredation control programs. Major highways would be fenced to reduce Roadkills (see Issue: Vehicle Access).
<b>Rationale for Selected Strategy:</b>	Elimination of unauthorized dumps in and near tortoise habitat and reduction of highway roadkills should aid in returning raven and coyote populations to natural levels.
<b>Recovery Plan Recommendations:</b>	No new landfills would be allowed in DWMAs. Existing unauthorized dumps would be closed and reclaimed. Raven population control would be implemented. Dogs would be required to be on leashes in DWMAs.



<b>ISSUE: Disease</b>	
<b>Scope of Issue:</b> At least three diseases, and possibly others, are affecting wild populations of desert tortoise.	
<b>Current Situation</b>	
<p><b>Current Situation in NEMO Planning Area:</b> The three main diseases affecting wild tortoise populations are upper respiratory tract disease (URTD), cutaneous dyskeratosis, and shell necrosis; the last two are often referred to collectively as shell diseases. Animals from study plots near Goffs and in Ivanpah Valley in the Mojave National Preserve have tested positive for URTD. Infection rates in samples have varied from year to year ranging from 5-39 percent at Goffs and 9-62 percent at Ivanpah Valley. High incidences of URTD occur in captives at Needles and Las Vegas just outside the Planning Area. Cutaneous dyskeratosis has been common in recent years at study plots in Shadow Valley, in Ivanpah Valley, and near Goffs (highest incidence). Environmental toxicants have been implicated in shell diseases.</p>	
<b>Effects</b>	
<p><b>Primary Effects:</b> Large die-offs in the West Mojave have been largely attributed to URTD, and similar die-offs on Chuckwalla Bench have been attributed to shell diseases. Similar die-offs can be expected in the Planning Area in the future. At a minimum, diseases increase physiological stress that can result in starvation or dehydration especially during drought.</p>	
<p><b>Other Effects:</b> Disease may make sick animals lethargic or weak predisposing them to predation or exposure to weather.</p>	
<p><b>Information Needs:</b> Additional information is needed on the epidemiology of all diseases of wild tortoises. Additional information is needed on the causative agent of shell diseases. The importance of environmental toxicants in tortoise health has not been clarified. The importance of nutrition, especially relative to alien plants, in recovery rates of sick tortoises is not known.</p>	
<b>Strategy</b>	
<p><b>Strategy in Preferred Alternative for Addressing Issue:</b> The strategy would continue 1) disease research programs, 2) prohibitions on reintroduction of captive tortoises into the wild, 3) education of the public about the disease issue and particularly the prohibition on release of captives, and 4) allowing only local relocation of tortoises in project mitigation.</p>	
<p><b>Rationale for Selected Strategy:</b> The only known URTD defense is to inhibit the spread by restricting the relocation of infected tortoises and to limit physiological stress by maintaining habitat in good condition.</p>	
<p><b>Recovery Plan Recommendations:</b> Research programs on disease would continue. Relocations in projects would be localized.</p>	



<b>ISSUE: Fire</b>	
<b>Scope of Issue:</b> This issue includes both the direct effects of burning the vegetation and the effects of fire suppression activities. Both natural and man caused fires are included.	
<b>Current Situation</b>	
<b>Current Situation in NEMO Planning Area:</b> Fire occurrence in tortoise habitat in the NEMO Planning Area is relatively low, averaging about one fire per year. Fires below 3,000 feet are usually man caused, occur along highways, and rarely exceed 1 acre in size. Above 3,000 feet, fires are mostly ignited by lightning strikes and are usually less than 10 acres in size. The BLM has a <i>Fire Management Activity Plan for the California Desert</i> . It includes fire suppression guidelines for critical habitat and other tortoise habitat. The intent is to limit the fire size without unnecessarily disturbing habitat. Post-suppression restoration is also implemented.	
<b>Effects</b>	
<b>Primary Effects:</b> Tortoises can be killed directly by fires. The small size of fires in the Planning Area limits the amount of mortality. Fires eliminate perennial plants used by tortoises as food and cover. If the fire is small, surviving tortoises may be able to move outside of the burned area for food and cover. Burned areas provide opportunity for the invasion and establishment of alien plants, perhaps degrading forage value over a wider area than the burn itself. Surface disturbance caused by equipment, if any, used in fire suppression would add to the habitat loss and alien plant invasion.	
<b>Other Effects:</b> As a part of fire suppression, unburned fingers and islands between burned areas and firebreaks (i.e., roads) are sometimes burned to prevent flare-ups. This can increase the size of burned area.	
<b>Information Needs:</b> Although some research has been conducted, there is much yet to learn about the relationship of fire and the spread and establishment of alien plant species.	
<b>Strategy</b>	
<b>Strategy in Preferred Alternative for Addressing Issue:</b> Suppression would include a mix of aerial attack, hand tools, foam or fire retardant with engines restricted to roads unless life or property are threatened. Post-suppression would include the obliteration of vehicle tracks off of roads, if any. Backfires and burning of unburned fingers and islands would be discouraged in DWMAs.	
<b>Rationale for Selected Strategy:</b> There is a need to limit the burn size while limiting surface disturbance by equipment.	
<b>Recovery Plan Recommendations:</b> Use of minimum impact fire suppression methods and restoration of disturbed areas would be required.	



<b>ISSUE: Alien Plants</b>
<b>Scope of Issue:</b> This issue includes the effects of alien plants on tortoises.
<b>Current Situation</b>
<p><b>Current Situation in NEMO Planning Area:</b> The distribution of alien plant species has not been mapped in the Planning Area. Most are highly competitive, and have the potential to replace native species. Many are associated with human disturbance and spread along corridors where soil and plant disturbance occurs, such as along streams, washes, roads, and utility lines. Among the most widespread in the Mojave Desert are Mediterranean (split) grass, various brome grasses, and filaree. Moroccan mustard has been spreading rapidly in recent years.</p>
<b>Effects</b>
<p><b>Primary Effects:</b> The invasion of alien plant species has greatly altered plant composition in some areas. This could potentially effect tortoise populations as thermal cover and forage are modified. Although many alien plants have nutritional value comparable to native plants, there is a reduction in diversity in the diet. Some alien plants, such as Mediterranean grass create a dense ground cover that carries fire more readily. Although fires have been small and few in number in the past in the Planning Area, they may become larger as alien plants increase (see Issue: Fire).</p>
<p><b>Other Effects:</b> As plant species composition is altered, changes can be expected in other ecosystem elements, such as animal community composition, soil structure and chemistry, and soil and surface hydrology.</p>
<p><b>Information Needs:</b> The effects of alien plants on ecosystem processes and soil chemistry and thermodynamics are not known. The mutual effects of alien plants and fire have been studied, but much is not known. The nutritional value of many alien plants is known, but the overall effects on tortoise diet and health is not known. Aside from minimizing disturbances, methods for controlling the invasion of new alien plants species and the spread of all alien plants are not known. Methods for restoring vegetation and minimizing the invasion of alien plants in project areas needs improvement.</p>
<b>Strategy</b>
<p><b>Strategy in Preferred Alternative for Addressing Issue:</b> The frequency and extent of surface disturbing activities would be reduced. Vegetation restoration using the best available techniques would be required on projects.</p>
<p><b>Rationale for Selected Strategy:</b> The invasion and spread of alien plants must be limited to the extent possible.</p>
<p><b>Recovery Plan Recommendations:</b> None were given.</p>



<b>ISSUE: Drought</b>	
<b>Scope of Issue:</b>	Drought refers to the absence or shortage of precipitation during seasons of normal occurrence such that the spring season has very low plant germination and growth.
<b>Current Situation</b>	
<b>Current Situation in NEMO Planning Area:</b>	Years with low precipitation in desert areas are common. Occurrences of successive years of low precipitation are not uncommon. Whether rainfall patterns have changed substantially through recent decades such that the occurrence of drought has increased is arguable.
<b>Effects</b>	
<b>Primary Effects:</b>	During years of low precipitation tortoises may be stressed due to a low internal water balance. In addition, the low forage availability may create nutritional deficiencies, such as low energy levels and/or low levels of essential nutrients. This can create stress or even starvation. Where stressed by lack of water or food, tortoises may be more susceptible to predation, disease, or exposure; presumably hatchling and juvenile tortoises are affected most. When water or food is low, both clutch size and number of clutches is reduced; reproduction may be eliminated. In some drought years, tortoises may be largely inactive in their burrows.
<b>Other Effects:</b>	In years of low forage production, competition between tortoises and other species or cattle may occur.
<b>Information Needs:</b>	Additional information is needed on the effects of precipitation on tortoise reproduction, alien plant populations, plant nutritional value, and other factors.
<b>Strategy</b>	
<b>Strategy in Preferred Alternative for Addressing Issue:</b>	Cattle grazing would be reduced or eliminated in DWMA's when ephemeral forage production (i.e., annual plant germination and growth) is low. Where feasible, authorized projects would be restricted to the non-tortoise season.
<b>Rationale for Selected Strategy:</b>	Although drought is beyond local control, activities that create additional physiological or behavioral stress can be reduced.
<b>Recovery Plan Recommendations:</b>	None were given.



<b>ISSUE: Monitoring</b>
Scope of Issue: This issue includes only the monitoring of tortoise populations.
<b>Current Situation</b>
<p><b>Current Situation in NEMO Planning Area:</b> There are three tortoise permanent study plots in the NEMO Planning Area - Ivanpah Valley, Goffs, and Shadow Valley. Only the last is on BLM land; the other two are in the Mojave National Preserve. The plots were surveyed regularly through the 1980's and early 1990's, but a lack of funds has prevented USGS from surveying these plots regularly since 1994. The plots were used to study population trends, demographics, and mortality factors. An additional technique called distance-sampling has been approved by the Tortoise Management Oversight Group. It will provide long-term population trend data on a recovery unit basis. Implementation of this program is awaiting refinement and funding.</p>
<b>Effects</b>
<p><b>Primary Effects:</b> There are no negative effects of the monitoring programs.</p>
<p><b>Other Effects:</b> None.</p>
<p><b>Information Needs:</b> Additional information is needed on the application of the distance-sampling methodology, which has been field tested only in limited situations.</p>
<b>Strategy</b>
<p><b>Strategy in Preferred Alternative for Addressing Issue:</b> The BLM would resume funding of population studies at the Shadow Valley plot on a four-year cycle. The BLM would also participate in the rangewide monitoring program employing distance-sampling methodology.</p> <p><b>Rationale for Selected Strategy:</b> The Shadow Valley plot was studied in 1979, 1988, and 1992; continued study of this plot can give important information on changes in tortoise populations and causes of mortality. It is important that the distance-sampling methodology be applied uniformly throughout the range of the tortoise. It will provide the basic trend data for determining recovery.</p> <p><b>Recovery Plan Recommendations:</b> Assessment of the permanent study plots would be continued. A second, new methodology, with sample plots randomly distributed over a wide area, would be applied rangewide.</p>







## APPENDIX D

### Monitoring

#### Tortoise Monitoring

**Permanent Study Plot Methodology** - In the 1970's, tortoise population studies were conducted on 47 plots. The method was to survey the sites intensively, locating all living tortoises and shell remains. In the early years, survey times of 15, 30, and 60 days were tested. Plot sizes of 1-2 square miles were used. For analysis of population trends, tortoise measurements are collected, and the sex is recorded. Shell remains are collected to derive minimum mortality and causes of death.

In the early 1980's, 15 of the 47 plots were selected by BLM as *permanent study plots* to be surveyed on a 4-year cycle. The Shadow Valley, Ivanpah Valley, and Goffs permanent study plots are located in the Northern and Eastern Mojave Planning Area. With designation of the Mojave National Preserve in 1994, only the Shadow Valley Plot is on BLM-administered land; however, the other two are within a few miles. Current methodologies involve two 30-day consecutive surveys (60 days total) of each plot; age-specific population estimates for each plot are computed using a modified Lincoln Index method. A description of the plot survey methods and the methods of analysis can be found in Turner and Berry (1984). Table E-1 shows the years the four plots have been surveyed.

**Table D-1: Desert tortoise permanent study plots in the Planning Area.**

Study Plot Name	Years Surveyed
Shadow Valley	1979, 88, 92
Ivanpah Valley	1979, 86, 90, 94,
Goffs	1980, 83-86, 90, 94, 00

The monitoring plots have provided valuable information on various demographic factors. Analysis yields such information as population density and trend, size-specific sex ratios, age structure, mortality rates, survivorship rates, and causes of mortality.

Until 1994, surveys and analysis of the permanent study plots were conducted by the BLM for the three plots on BLM-administered lands. In 1995, responsibility for these surveys was transferred to the Biological Research Division of the U. S. Geological Survey. In the past few years, funding for these surveys has been inconsistent.

In the early 1990's, the permanent study plot methodology came under criticism primarily because:

- 1) the plot locations were not selected randomly but in relatively undisturbed locations;



- 2) the low number of plots does not adequately represent the variation present over the expanse of tortoise habitat;
- 3) there has been inconsistent funding resulting in variation in the 4-year sampling period;
- 4) there is an invalid assumption that tortoises do not enter or leave the study plot during the entire spring study period;
- 5) different size classes are not equally detectable; and
- 6) tortoise above-ground activity may not be 100 percent in poor forage years and is not constant throughout the 60-day sampling period (Tracy, undated).

Despite the criticisms of this monitoring methodology, it has 20 years of history and has provided a tremendous amount of research material. This has resulted from collections of shells, measurements of burrows, measurements of tortoises, notes on predators and human uses, and other data besides counting tortoises. The Desert Tortoise Recovery Plan suggests that a new methodology giving more reliable trend information be developed to supplement but not replace the permanent study plots.

**Distance Sampling Methodology** - A number of alternative methods for measuring population density and, hence, determining trends in density have been examined in the field (Tracy undated). The selected technique for monitoring desert tortoise trends on a recovery unit basis is a *stratified distance-sampling/above-ground detection* methodology. In this method, each recovery unit is divided into homogeneous *strata*. The strata represent areas where 1) vegetation, soil, and topography are such that tortoises are everywhere equally visible, and 2) all tortoises are engaged in similar activity throughout the stratum at any given time. For the latter assumption, it is especially critical that the proportion active above ground is similar throughout the stratum. A separate survey is to be performed in each stratum.

In 1997 several teams of biologists met to delineate strata in the various recovery units. Strata were delineated only for areas of potential long-term management (i.e., Desert Wildlife Management Areas (DWMAs) as described in the Desert Tortoise Recovery Plan).

The proposed methodology is conducted with two teams, one team (Team A) searching a strip transect for tortoises, and one team (Team B) assessing the proportion above ground using radio telemetry. For Team A, a system of permanent line transects is positioned randomly in the stratum. Each transect is 4 km in length. Each transect is searched by 2-3 observers in a strip 10 meters on each side of the line. The area near the line must be searched thoroughly. For each tortoise sighted, the distance from the tortoise to the line is recorded. From these data a distance-detection function is constructed. This function is then used to estimate the number of tortoises above ground in the strip transect. A simple multiplication yields an estimate of the number of tortoises present above ground in the entire stratum. (Anderson and Burnham, undated)

Team B uses radio-telemetry equipment to relocate tortoises that have been previously radio-tagged. About 25 tortoises must be relocated in each strata. From the relocation



sightings, an above-ground proportion is determined. This proportion is then used to correct the estimate from Team A to give a total estimate for the number of tortoises in the DWMA. (Anderson and Burnham, undated)

In 1999, a rangewide tortoise monitoring coordinator will be selected. This coordinator will move the trend monitoring program forward aggressively in subsequent years. Dr. Kristin Berry of U. S. Geological Survey will continue to manage permanent study plot assessments and data analysis for the California Desert.

## **Integrated Ecological Monitoring**

Plans are underway for development of a California desertwide ecological monitoring program. This program is being developed under direction of the *Desert Managers Group*. The goal of the program is to evaluate ecosystem functions and resource sustainability in the California Desert. The elements of the program can be grouped into three areas:

1. **Early Warning** - This monitoring will give managers a comprehensive view of how the ecosystem is changing over time, especially in response to a range of human effects.
2. **Compliance** - This monitoring will indicate whether agency efforts are meeting various mandated responsibilities (e.g., recovery of endangered species).
3. **Diagnosis** - This monitoring will assess the effects of specific management actions, in particular their impacts on resources.

Under current plans, a regionwide monitoring coordinator will be selected as soon as funding is available. Then, a list of "vital signs" indicating ecosystem health will be identified, a range of alternative methodologies will be defined, monitoring sites will be selected, thresholds of acceptable change will be established, and a data management system will be established.

## **Livestock Grazing Monitoring**

Monitoring can be defined as the orderly, repeated collection and analysis of resource data to evaluate progress in meeting resource management objectives (this is based on BLM Manual 6600). The repetition of measurements over time for the purpose of detecting change distinguishes monitoring from inventory.

### **Types of monitoring.**

Several types of monitoring have been identified. The following two are particularly relevant to monitoring livestock grazing (see MacDonald, et al. 1991, for a discussion of these and other types of monitoring).



- **Trend monitoring.** Monitoring to determine the long-term trend in a particular parameter. For example, is the population of a key species increasing, decreasing, or remaining stable at a particular site?
- **Implementation or compliance monitoring.** This type of monitoring assesses whether activities were carried out as planned or whether livestock operators are complying with the terms of management plans and permits/leases. For example, did BLM construct the pasture fence in FY 1993 as called for in the activity plan? Did the operator move the mineral blocks at least 1 mile from the riparian-wetland areas as required in the allotment management plan? One of the major types of rangeland monitoring, involving the measurement of utilization is a form of compliance monitoring. We'll discuss this in detail below.

### Levels of monitoring.

**Qualitative and semi-quantitative monitoring.** Although many people equate monitoring with the gathering of some type of quantitative information, qualitative assessment of the condition of rangeland resources is a valid and important form of monitoring. Because of constraints related to limited budgets and workforces and the number of allotments for which BLM is responsible, qualitative monitoring is the level of monitoring most commonly employed in grazing management. Following are types of qualitative and semi-quantitative monitoring:

- **Stewardship integrity monitoring.** This involves visiting areas to ensure the habitat has not changed dramatically, as might occur with fire, overgrazing, trespass mining, vehicular use, etc. Aerial photography at specified intervals could also be used to assess some of these impacts without actually visiting the site.
- **Photoplots.** Photographs can provide important documentation of changes, particularly to habitat, over time. Although listed here under qualitative techniques, photoplots can also be used as a form of quantitative measurement. For example, several close-up photographs may be taken at a site and the number of individuals of the plant species of interest in each photograph counted or estimated.
- **Presence or absence.** Sites are visited to determine if a rare species is still extant or to determine whether a noxious weed has invaded a site.
- **Occurrence mapping.** An occurrence of a rare species or a riparian area may be mapped by delineating the distributional boundaries on the ground or on aerial photos.
- **Utilization pattern mapping.** Mapping the utilization made on key forage species is an important and effective form of grazing monitoring. The entire allotment or individual pasture is canvassed, usually following the removal of livestock, and the amount of utilization in different areas on one or more key plant species is assessed. Areas are then mapped into several classes based on level of utilization (e.g., no use,



light use, moderate use, and heavy use). Ocular estimation is often used to assign areas to one of these classes, but sometimes quantitative studies are also used (e.g., utilization transects are established in different areas of the allotment and used to assign these areas to a particular utilization class).

Utilization mapping is usually done each year for several years to determine if patterns are consistent from year to year. Where rest rotation grazing systems are in place, yearly mapping is normally conducted until the completion of at least one rotational cycle. The results of utilization pattern mapping can then be used to identify over-utilized areas of the allotment in need of adjustment through different management and to locate key areas (discussed below) for future monitoring studies.

- **Other observations.** Additional information deemed to be important may be collected based on ocular estimates. Examples are: presence/absence of individuals of a key species in different size classes; rough categorical estimate of the percent of plants in each size class; presence/absence of a defined condition in individuals at a given location (e.g., flowering, diseased, infested by insects, dead); rough categorical estimate of the percent of plants exhibiting the condition (e.g., 25-50% flowering).

The strengths of qualitative and semi-quantitative monitoring are that it is quick and therefore inexpensive, it allows assessment of large areas, such as complete allotments and pastures, it provides insight on condition and management needs, and it can serve as a "red flag" to trigger quantitative monitoring. The weaknesses of this type of monitoring are that different observers may reach different conclusions when no real difference exists; the interpretation is somewhat subjective; it provides purely descriptive information with no potential for analysis; and the only detectable change is often dramatic and severe.

**Quantitative monitoring.** In performing quantitative monitoring studies you *measure* something. This can mean, for example, that you count the number of individuals of a key plant species (either in total or by size class), you estimate its cover in plots, or you measure the size (height, cover or both) of individual plants. Quantitative monitoring involves taking a sample to estimate something about the parameter of interest, such as the cover or vigor of a key species in a pasture. Because sampling is involved, there is error around estimates of these parameters that must be considered in analysis. Statistical analysis takes these sampling errors into account when determining whether changes have occurred or thresholds (such as utilization levels) have been crossed.

**Key area concept.** Many, if not most, rangeland vegetation monitoring studies employ the key area concept. Using this approach, key areas are selected (subjectively) that (we hope) reflect what is happening on a larger area. Key areas are areas chosen to be representative of a larger area (such as a pasture) or critical areas such as riparian-wetland areas and sites where endangered species occur. Monitoring studies are then located in these key areas.



Although we would like to make inferences from our sampling of key areas to the larger areas they are chosen to represent, there is no way this can be done in the statistical sense because the key areas have been chosen subjectively. An alternative is to sample the larger areas, but the constraints of time and money coupled with the tremendous variability usually encountered when sampling very large areas often makes this impossible. The key area concept represents a compromise.

Because statistical inferences can be made only to the key areas that are actually sampled, it is important to develop objectives that are specific to these key areas. It is equally important to make it clear that actions will be taken based on what happens in the key area, even when it can't be demonstrated statistically that what is happening in the key area is happening in the area it was chosen to represent. It is also important to base objectives and management actions on each key area separately. *Values from different key areas should never be averaged.*

**Key species concept.** Just as the key area concept is a compromise between sampling an entire allotment versus sampling only a portion of it, the key species concept is a compromise between tracking change in all plant species versus tracking change in those species that are most likely to be affected by management. The latter species are called key species and are chosen based on several criteria. First, they are usually species that are preferred forage for livestock. Thus, they can be expected to increase under proper grazing management and decrease under improper grazing management. They therefore provide valuable information on the success of management. Second, they should be common enough that monitoring them will not be overly difficult or intensive. Third, changes in the distribution, vigor, or abundance of these key species should be representative of similar changes to other species deemed to be important to the plant community desired for a particular site. In this instance key species serve as keystone or indicator species. A fourth criteria that can be employed is legal status: special status plants may be singled out to be monitored regardless of their rarity or whether they function as keystone or indicator species.

**Long-term (trend) monitoring.** What most interests the range manager is how ecosystems (including plant and animal communities and abiotic factors such as soil) change over time in response to management. Usually only vegetation is monitored and an assumption made that if certain types and amounts of desired vegetation are present then the desired animals and desired soil conditions are also present. The assessment is made through either quantitative or qualitative monitoring studies usually located in key areas of the allotment. Photoplots and checklists are the principal qualitative monitoring method used in trend monitoring. An example of the checklist approach is the proper functioning condition checklist used in riparian areas. Although this approach can be considered to be inventory, its use at the same site on two or more occasions is a form of monitoring.

Quantitative monitoring methods are several and usually entail the measurement of some attribute of key species at key areas. The Interagency Technical Reference, Sampling Vegetation Attributes (BLM et al. 1996a), includes most of the types of range studies



employed by BLM nationwide. In the EIS area the two most common quantitative trend methods involve the use of cover and frequency measurements.

Cover measurements entail the estimation of the percentage of ground surface covered by vegetation. Three types of cover are measured, depending on the measurement method and the biology of the target plant(s). *Canopy cover* is the area of ground covered by the vertical projection of the outermost spread of the foliage of plants, including any small openings in the canopy. Canopy cover measurements are used in estimating the cover of shrubs, trees, and herbaceous plants. The line intercept method (BLM et al. 1996a) is most often used to estimate shrub and tree cover or, alternatively, aerial photographs are used. Canopy cover of herbaceous plants is usually made using plots, such as those described for the Daubenmire method (BLM et al. 1996a). *Foliar cover* is the area of ground covered by the vertical projection of the aerial portions of plants, with small openings in the canopy excluded. This is the type of cover measured by the point intercept method (BLM et al. 1996a), a method used primarily for herbaceous plants. *Basal cover* is the area of ground surface occupied by the basal portion of plants. This is the type of cover often used to monitor changes in bunchgrasses or tree stems. The basal area of bunchgrasses is estimated using line intercepts or estimation in plots. Several methods are applicable to the estimation of tree basal cover; these, however, are rarely used in grazing-related monitoring and will therefore not be discussed here.

Depending on objectives, cover is measured on key species, on all species, or on broad cover categories (e.g., live vegetation, litter, bare ground, and gravel). Total ground cover is important in determining whether sites are adequately protected from accelerated wind and water erosion. Cover of key species is important in determining whether objectives relative to increasing or maintaining the key species are being met.

Changes in the canopy and foliar cover of herbaceous species can be difficult to interpret because they can vary widely with climatic fluctuations. It is therefore difficult to tell whether changes are due to grazing management, weather, or a combination of both. Basal cover is much less sensitive to climatic fluctuations and a better indicator of trend in those species that are amenable to basal cover measurement (e.g., perennial bunchgrasses). The canopy and foliar cover of most woody shrubs does not vary nearly as much as herbaceous plants with climatic fluctuations, and these types of cover are often used to assess trend due to management (sub-shrubs, however, can present the same interpretation problems as herbaceous plants).

Frequency is another attribute often used to assess long-term trend on rangelands. It is one of the easiest and fastest methods available for monitoring vegetation. Frequency is the number of plots (called quadrants) occupied by a particular species, expressed as a percentage. For example, let's say we decide to sample 100 randomly placed 1m x 1m quadrants in a key area. If 40 of these have Key Species A in them, then we say that the frequency of Key Species A in that key area is 40 percent (note that we are interested only whether the species is present or absent in each quadrant--a species is present in a quadrant if 1 or if 100 plants occur in it). We then compare this 40 percent frequency with the value we come up with the next time the key area is sampled to determine if the



trend in this key species is up, down, or static. The best results are obtained when frequencies range from 20-80 percent.

Unlike cover, which is not dependent on the type or size of sampling unit used, frequency is only meaningful when the same quadrant size and shape is used in each year of measurement. When measuring the frequency of more than one plant species, it is often difficult to use the same size quadrant and maintain a frequency of 20-80 percent for all species. In these situations a nested frequency quadrant is often used. For example, within a 1m x 1m quadrant, three other quadrant sizes, 50cm x 50cm, 30cm x 30cm, and 10cm x 10cm, are nested. At each random placement of the quadrant, the smallest to the largest quadrant size is searched for the target species. If the species is found in the smallest quadrant, then it is also found in all other quadrants; if it is not found in the smallest quadrant, then the next smallest quadrant is searched, and so on. Once the first year's data are collected, optimal quadrant sizes can be determined for each species.

Changes in frequency can be due to changes in density or spatial pattern. Interpretation can be difficult because of this. However, if the data are recorded on a quadrant-by-quadrant basis, if seedlings and established plants are recorded separately, and if other trend data such as cover are collected at the same time, interpretation becomes easier.

The vertical structure of vegetation can be extremely important to wildlife. This is especially true in riparian areas. Most offices monitor this through the use of photoplots and other qualitative methods. Some offices use quantitative techniques such as the cover board method (BLM et al. 1996a) to monitor vertical structure.

**Short-term (utilization) monitoring.** Except for very favorable sites, such as riparian-wetland areas, changes in vegetation attributes such as frequency and cover can be very slow, making it hard to detect these changes until many years or even decades have passed. This lag time not only makes it difficult to assess the effects of management, it can place the natural resources at risk: if the changes, once they are detected, are in the wrong direction, correcting this downward trend may be all that more difficult or even impossible. Supplementing long-term monitoring with short-term monitoring studies is a means of reducing this risk. These short-term studies monitor the amount of utilization made on key plant species.

Management objectives are developed that specify how much utilization is allowed on key species before livestock are moved off a pasture. Utilization is then estimated through monitoring studies, and management actions implemented accordingly. These management actions can consist of taking immediate action in the same year (i.e., immediately moving livestock out of the pasture once the utilization threshold is approached or crossed) and of making long-term changes to the livestock grazing on an allotment (i.e., reducing stocking rate or season of use if utilization levels are consistently high).



Several methods are used by different field offices in California to estimate utilization. The Interagency Technical Reference, Utilization Studies and Residual Measurements (BLM et al. 1996b) describe these methods.

Most current BLM land use plans allow for utilization of key perennial grass species of 50 percent of the annual above-ground production (some plans specify a range of 40-60 percent utilization). Holechek (1991), however, points out that:

A 50% use level works well in the flat, humid regions of the Great Plains and Southeast because of their high productivity and high adaptability of the plants to grazing. However in most cases it causes range destruction in the rugged, arid ranges of the West. Research shows stocking rates that involve a 30 to 40% forage use level will enhance range recovery, maintain adequate food and cover for wildlife, protect soil resources and will give the highest long term economic returns with the least risk on nearly all of the western range types (see reviews by Holechek et al. 1989, Vallentine 1990).

It is also important to estimate utilization on shrubs, where these species are important components of the ecosystem. Areas that support shrub species that are used by livestock and wildlife include: (1) riparian areas, which often support willows and other shrubs; (2) areas within the sagebrush steppe where bitterbrush and other shrubs are important components; and (3) areas where saltbushes and other related shrubs occur, both in the sagebrush steppe and annual grassland vegetation types. There are 19 allotments (an area determined to be suitable for grazing) within the NEMO planning area. Eight allotments are located within the Ridgecrest Resource Area; ten within the Needles Resource Area and one in the Barstow Resource Area. With the passage of the CDPA, 3 allotments have portions located in Death Valley National Park, and eight allotments have portions located in the Mojave National Preserve.

## Literature Cited

**Anderson, D. R., and K. P. Burnham.** Undated. A monitoring program for desert tortoise. Rept. of Colo. Coop. Fish and Wildlife, Res. Unit, Fort Collins, Colo.

**Tracy, C. R. Undated.** Workshop on estimating size of desert tortoise populations (WESDTP). Rept. on workshop held in 1996.

**Turner, F. B., and K. H. Berry.** 1984. Methods used in analyzing desert tortoise populations. IN Berry, K. H. 1984. The status of the desert tortoise (*Gopherus agassizii*) in the United States. Contract Rept. No. 11310-008-0083-81 to USFWS.







## **APPENDIX E**

### **PROPOSED CATTLE, WILD HORSE AND BURRO GRAZING STIPULATIONS IN NORTHERN AND EASTERN MOJAVE DESERT TORTOISE HABITAT**

Cattle grazing allotments terms and conditions for grazing use on desert tortoise habitat have been separated into groups based on quantity and quality of desert tortoise habitat. Group 1 allotments contain only Category III habitat, and consist of Pahrump and Horsethief Springs Allotments. Group 2 allotments contain relatively small portions of Category I and II habitat, and consist of Clark Mountain, Crescent Peak and Granite Mountain Allotments. Group 3 allotments contain large amounts of Category I and II habitat, and consist of Chemehuevi Valley, Jean Lake, Kessler Springs, Piute Valley, Valley View and Valley Wells Allotments.

The following stipulations apply to Group 1, 2 and 3 portions of allotments.

1. Within key areas, utilization shall be limited to between 30 and 50 percent of key forage species. In desert tortoise habitat, utilization of key perennial grasses shall not exceed 40% from February 15 to November 1. No averaging of utilization levels among key species or key areas shall occur. When utilization approaches authorized limits in any key area, steps shall be taken to redistribute or reduce cattle use of that key area. These steps shall include removal of cattle or, where feasible, turning off water at troughs to reduce adjacent grazing.
2. Cattle shall be evenly dispersed throughout their area of use, and herding shall be limited to shipping and animal husbandry practices. Grazing use shall be managed according to grazing regulations, allotment management plans, CDCA Plan, and current biological opinions. All individuals and groups implementing activities in desert tortoise habitat shall be briefed about the status of desert tortoise and protection measures instituted to reduce potential impacts to the habitat and animal. Grazing use will be managed to improve trends for native perennial and annual plants where site potential permits. Feeding of roughage, such as hay, hay cubes, or grains to supplement forage quantity, is not allowed. Grazing shall be curtailed to protect perennial plants during severe or prolonged drought.
3. All cattle carcasses found within 300 feet of any road shall be removed and disposed of in an appropriate manner, and no prior notification to the BLM is necessary if off-road vehicle use is required, but permission from the authorized officer is required to remove animals within wilderness.



4. Authorization for ephemeral forage in Category III desert tortoise habitat shall occur when 200 pounds of air dry-weight per acre or more of ephemeral forage is available. Any replacement cattle authorized to use ephemeral forage shall be removed from such allotments whenever the thresholds for curtailing ephemeral grazing are reached. Temporary, non-renewable perennial forage above permitted use in Category III habitat, shall be authorized for three-month increments.
5. The level of utilization of perennial forage in Pahrump Allotment will not exceed 40%. Clark Mountain, Horsethief Springs, and Valley Wells are in fair or poor condition and utilization will not exceed 40% until condition class improves.
6. Construction and maintenance of range improvements in desert tortoise habitat are limited to current biological opinion. For all construction, operation, and maintenance of range improvements involving land disturbance in desert tortoise habitat the following requirements apply:
  - A. Surface disturbance during construction of range improvements shall occur on previously disturbed sites and shall be minimized whenever possible. Routine vehicle use shall be limited to existing roads and disturbed areas, and off-road vehicle activity shall be held to a minimum. Construction of new roads shall be minimized. Construction of new or replacement facilities shall be carried out only from November 1 to March 15, unless specifically authorized due to safety or emergency considerations. After completion of the project, the disturbed soil shall be blended and contoured into the surrounding soil surface. To reduce attraction of desert tortoise predators, debris and trash created during construction or maintenance of a facility will be removed immediately.
  - B. Range improvement construction, operation, and maintenance shall be modified as necessary to avoid direct impacts to desert tortoises and their burrows e.g., construction of fences or pipelines near tortoise burrows shall be avoided. Existing access and areas of disturbance shall be utilized when trenching a section of new pipe or during performance of maintenance. Any hazards to desert tortoises that may be created, such as auger holes and trenches, shall be monitored by a biological monitor at least twice daily for desert tortoises that might become trapped. These hazards will be eliminated before workers leave the site.
  - C. Prior to land-disturbing activities, a field contact representative (FCR) will be designated to ensure compliance with protective measures stipulations for the desert tortoise and will be responsible for coordinating with the Service. A FCR will have the authority and responsibility to halt activities in violation of the



Service stipulations.

D. Only authorized personnel are permitted to handle desert tortoises. If construction or maintenance of a range improvements endangers the life of a desert tortoise then authorized persons may move the animal a short distance away or hold the animal overnight to release it in the same area the next day.

E. All construction and maintenance workers shall strictly limit their activities and vehicles to areas flagged or cleared by persons authorized by the Service. When off-road use with equipment is required, the lessee is to notify the BLM two working days prior to construction or maintenance of a facility.

7. In Category I of Clark Mountain, Kessler Springs, Piute Valley, Valley View, and Valley Wells Allotments authorization of forage shall occur when 230 pounds of air dry-weight per acre or more of ephemeral forage is available for spring turn-out.
8. In Clark Mountain, Jean Lake, Kessler Springs, Piute Valley, Valley View, and Valley Wells Allotments no new or replacement cattle water sources shall be constructed within 1/2 mile of Category I unless it is an overall benefit to the desert tortoise. Concurrence between the Service and the BLM shall be required to determine whether a benefit would accrue. Only those new range improvements which will not create conflicts with desert tortoise populations shall be allowed.
9. For Clark Mountain, Jean Lake, Kessler Springs, Piute Valley, Valley View, and Valley Wells Allotments in Category I habitat no temporary, non-renewable use shall be authorized. Utilization shall be light (no more than 40 percent) on all key species. Galleta grass shall be a key forage species wherever it is found. New key areas shall be established in areas accessible to cattle and within 1/2 mile of water sources.
10. Grazing use shall be limited to November 1 to February 28 in the Jean Lake Allotment.
11. The Lanfair Valley Allotment has been retired.
12. In Piute Valley Allotment, cattle shall be removed and water turned off to cattle troughs (unless needed for wildlife) in Category I habitat east of the power line road.
13. In the Valley View Allotment, cattle water sources shall be managed to discourage use of category I habitat.
14. In the Valley Wells Allotment, cattle water sources shall be managed to encourage summer use by cattle of the higher elevation portions of the allotment, out of Shadow Valley. Utilization of pipeline P5 and P6P (BLM, 1991) to establish water sources



outside of Category I habitat is authorized. However, no new or replacement water sources shall be constructed along these pipelines in Category I habitat.



## **WILD HORSE & BURRO GRAZING USE GUIDELINES IN NORTHERN AND EASTERN MOJAVE DESERT TORTOISE HABITAT**

WH&B herd management area (HMA) guidelines for grazing use on desert tortoise habitat have been separated into groups based on quantity and quality of desert tortoise habitat. Group 1 HMAs contain only Category III habitat, and consist of Chicago Valley and Dead Mountains. Group 2 HMAs contain significant portions of Category I and consist of Clark Mountain and the Slate Range.

The following guidelines apply to Group 1 and 2 Herd Management Areas in desert tortoise habitat.

1. Within key areas, use shall be limited between 30 and 50 percent of key species. In desert tortoise habitat, utilization of key perennial grasses shall not exceed 40% from March 15 to November 1. No averaging of utilization levels among key species or key areas shall occur. If not identified, key areas within each HMA shall be established within three years. Galleta grass is a key species when found in a key area. When utilization approaches authorized limits in any key area, steps shall be taken to redistribute or reduce WH&B use of that key area. These steps shall include removal of WH&Bs or, where feasible, turning off water at troughs to reduce adjacent grazing.
2. Range improvement projects shall be constructed and maintained following standard environmental guidelines. Construction shall occur on previously disturbed sites, whenever possible. Environmental guidelines shall require that no known desert tortoise burrow be destroyed and that the chance of incidental take of desert tortoises be minimized.
3. WH&B grazing management strategies shall be followed to protect perennial plants during severe or prolonged drought.
4. Monitoring of perennial plant utilization, ephemeral forage production, and range condition and trend shall be implemented according to the methods and scheduling detailed in herd management plans and in accordance with the Bureau Manual, CDCA Plan, and technical references.
5. All HMAs shall be managed according to a current HMAP for the areas. The East Mojave HMA will be supplemented to address proposed changes in management to the Clark Mountain herd.



6. HMAs shall be managed for an increase of native perennial and annual plants, and promote continued improvement in trend and forage condition in areas where natural site potentials permit.
7. Private and Federal personnel shall be advised that handling, harming, or harassing desert tortoises without specific authorization is a violation of the Endangered Species Act. Handouts summarizing this information shall be provided to all personnel implementing all actions proposed in which may result in a take of desert tortoises.
8. For all operational activities (e.g., gathers, range improvement development) involving land disturbance in desert tortoise habitat:
  - a. All removal trap locations shall be located at previously disturbed sites. Surface disturbance, particularly road construction and off-road vehicle activity shall be held to a minimum. After completion of the activity, the disturbed soil shall be blended and contoured into the surrounding soil surface.
  - b. Prior to conducting these surface disturbing activities, desert tortoise surveys of the project sites shall be conducted by qualified BLM personnel.
  - c. Range improvement construction, operation, and maintenance shall be modified as necessary to avoid direct impacts to desert tortoises. Hazards that may be created, such as auger holes and trenches, shall be monitored by a biological monitor at least twice daily for desert tortoises that might become entrapped. These hazards shall be eliminated prior to the work crew leaving the site.
  - d. Prior to land-disturbing activities, an individual shall be designated as a field contact representative who shall have the authority to ensure compliance with protective stipulations for the desert tortoise and be responsible for coordination with the U.S. Fish and Wildlife Service (USFWS). Such designated representative shall have the authority and responsibility to halt activities that are in violation of stipulations.
  - e. If desert tortoises are found above ground within areas to be disturbed by operational activities, and in the opinion of a qualified BLM representative are endangered by the proposed activity, they shall be relocated by an authorized desert tortoise biologist a short distance away from the activity zone in the direction of undisturbed habitat. Relocated desert tortoises shall be placed in



the shade of a large, marked shrub. If activities are short in duration, the authorized BLM biologist may elect to hold the desert tortoise overnight and release the animal the next day at or near the point of capture after the activity has been completed. Only persons authorized by the FWS shall be permitted to handle desert tortoises.

f. Each tortoise found within a trench or above ground within three hours of nightfall or when ambient air temperatures exceed 90 degrees Fahrenheit shall be placed in a clean disposable cardboard box and held overnight in a cool location. The box shall be covered and kept in possession of a qualified biologist for release the next morning in the manner described above. Cardboard boxes used to hold desert tortoises shall be new, used once, and discarded. All materials which come into contact with desert tortoises shall be used only once and then properly discarded to minimize contact with the causative factor(s) for URTD or other diseases.

g. All personnel working at the site shall strictly limit their activities and vehicles to areas which have been flagged by the qualified individual to eliminate adverse impacts to desert tortoises and their habitat. All personnel shall be instructed that their activities are restricted to flagged and cleared areas.

9. Until range conditions improve to good condition in the Clark Mountain, herd management area, utilization of key species shall not exceed 30 percent.

The following stipulations apply to Group 2 Herd Management Areas in Category I desert tortoise habitat.

10. New or replacement water sources (not including water pipelines which may traverse, but do not provide water sources in Category I habitat) shall not be constructed within  $\frac{1}{2}$  of a mile from Category I, unless an overall benefit to desert tortoise would accrue, after consultation with the USFWS.







## APPENDIX F

# NEW SURFACE DISTURBANCES AND REHABILITATION STRATEGIES

### CUMULATIVE SURFACE DISTURBANCES

New surface disturbance on lands administered by Federal and State agencies within any desert tortoise ACEC will have a cumulative limitation -- this limitation is proposed to be 1 percent of suitable habitat in the preferred alternative. The amount that may be disturbed will be apportioned among the various participating agency jurisdictions.

**Rationale** - The limit of 1 percent on cumulative surface disturbance is intended to show a high level of commitment to conservation of natural habitats. Although the 1 percent level may seem arbitrary to some, it is expected to accommodate the needs of those activities that must occur in the ACEC based on low historic levels of use in these areas. Among these are communication sites, maintenance of existing and construction of new utilities in designated utility corridors, dispersed recreation, and mining. It is anticipated that retaining 99 percent of what is presently in natural condition will be sufficient for maintaining viable populations of all species that are dependent upon the ACEC; conserving lesser amounts might be arguable. The commitment to limiting cumulative disturbance is an alternative to the prohibition on specific classes of activities based primarily on our ability to prohibit them rather than on their expected level of occurrence and size, their need, their public value, etc. It gets us closer to the direct effect on species that we are attempting to address: prevention of loss of habitat.

**Specifics** - Surface disturbing activities are those which result in elimination of perennial plant cover over an area. Elimination may result from blading or otherwise destroying plant roots and severely disturbing soil structure or it may be less severe in the form of crushing of above-ground plant parts. The localized effects of new corrals or livestock watering sites will be considered surface disturbing, but general grazing will not be. Burned areas will not be included under the 1- percent limit.

Surface disturbing activities will be recorded on 7.5-min. topographic maps and entered into a GIS database. Disturbances will be recorded as they are permitted. Unauthorized disturbances will also be entered as they are identified. Disturbances on private lands may also be recorded but will not be limited to 1- percent cumulative disturbance.

Lands acquired by an agency will be added to the base in their condition at the time of acquisition. That is, disturbance present on the parcel at the time of acquisition will not be added to the cumulative new disturbance.

If an interstate highway or state highway is widened and creates new surface disturbance in an ACEC, the new disturbance will not be covered by the cumulative limit if highway fencing is



added. The fencing will result in increased tortoise populations along the highway due to decreased tortoise mortality on the road. In addition, there may be a decrease in raven populations as roadkills supporting ravens are reduced.

## **REHABILITATION STRATEGIES**

**Trigger for Evaluation of Rehabilitation** - As disturbed lands are restored, it would be practical that they may be subtracted from the cumulative total of disturbed lands. Lands may be evaluated for removal only after they meet the following “40% criteria” (or *evaluation trigger*); passing of the evaluation trigger alone will not remove the disturbed lands, it is the point at which evaluation of lands would be initiated:

Perennial plants are present in densities and sizes so that impacts are substantially unnoticeable in the area as a whole and so that the area provides food and shelter for key wildlife species in the area. More specifically, each species in a suite of the most dominant perennial plants prior to disturbance must be reestablished to at least 40 percent of its original density (i.e., number of plants/hectare) and at least 30 percent of its original total cover. The choice of the suite of dominant perennial plants are any combination of perennial plants which originally accounted cumulatively for at least 80 percent of relative density.<sup>1</sup> There will be no less than two dominant perennial species.

The use of only perennial plant cover in the evaluation trigger allows calculation of the restoration requirement in any year (wet or dry) and any season. The use of specific numbers allows the evaluation trigger for a particular site to be known prior to the disturbance. It should be noted that some important plants, such as Joshua trees, which are important as an overstory plant but are not dominant, would not be a part of the evaluation trigger. Reestablishment of such plants could, of course, be a restoration requirement for a particular project, but they would not be used to trigger an evaluation for the purposes of reducing the cumulative disturbance total. Annual plants are difficult to use in evaluating restoration progress because 1) the number of species is very high, 2) identification is difficult, and 3) the presence of a given species is highly variable from year to year based on factors (e.g., rainfall) unrelated to habitat restoration. The evaluation trigger does not preclude the possibility that annual weeds may be present or even prevalent. Once an evaluation is triggered, many factors would be considered in the analysis of the site.

**Rehabilitation Factors** - Many of the ideas and information described below come from the Desert Restoration Task Force, a committee to the Desert Managers Group (DMG). This committee has developed publications on the subject. One part of the array of management initiatives of the DMG includes restoration of disturbed sites. This is being specifically addressed through the DMG subcommittee for the Desert Restoration Task Force. This group has published a technical manual on the subject. In it tried and tested site planning and application techniques as well as experimentation are encouraged. Much more will be learned



and written over time. The intent of this discussion is not to review the technology or ?cook-book? restoration design on a species and habitat basis, but to review some thought considerations and convey an intent that more sophisticated and effective rehabilitation measures are needed and expected for future authorized disturbances. In the final analysis it will be left to case-by-case field applications to evaluate the specific needs, actions, expense that will result in site conditions which approximate natural disturbance, and identify priorities for restoration.

The NECO Science Panel which met on November 12, 1998, noted that disturbance is not entirely a negative ecological condition or just human-caused. Wash, wind, tectonic, fire and other violent natural forces cause episodes of natural disturbance and are forces of natural ecological processes. Variables to consider in restoration may include the amount, location, nature, and effects of disturbance and other constraints. Disturbances that pose serious problems and that do not lend themselves to a “construction” solution are not addressed here. These include disease, unnatural change to fire regime, and exotic plants. To meet this mandate decision makers must apply site planning and consider a variety of technical applications. Site planning and restoration considerations may include:

1. **Special Status Species**
  - listed, proposed for listing, sensitive
  - species-habitat relationships that apply.
2. **Plant Community**
  - common, rare
  - site quality
3. **Management Goals**
  - general management goals
  - special management goals (e.g., DWMA, WHMA, species and sensitive habitats). This consideration is critical and can make the difference between a minimally necessary and special needs restoration and cost.
4. **Ecological Processes**
  - determine the preexisting condition, distribution of species and habitats
  - most important to restore and that humans can effect
  - commonly considered are soil, hydrologic, wind functions, movement of animals, sources and movement of seed.
5. **Conservation Principles**
  - patch size (fragmentation)
  - plant cover
  - corridors
  - habitat conversion to exotic species
6. **Site Context**
  - site in area of habitat
  - site in the range(s) of species
  - site quality



- cumulative situation, if any, of this site, with others of a permanent/temporary disturbance nature
- 7. **Site Analysis/Pre-existing Site Condition - constraints and objectives**
  - Topography, Slope, Aspect
  - Landforms (e.g., washes, desert pavement, sand systems)
  - Surface and Subsurface Soils
  - Vegetation
  - Subsurface organic matter
  - Surface texture/micro-habitat: organic debris, soil, sand, rock texture
- 8. **Constraints**
  - Can approximate original topography be achieved?
  - Is compaction a problem?
  - Historic use patterns
  - Are materials on hand to recreate original surface texture?
  - Are there uses to prevent or that could impair restoration efforts?
  - Time
  - Cost
- 9. **Common applications** (not for all situations)
  - Grading (topography, landform, microtopography, surface texture)
  - Replacing topsoil
  - Increasing soil moisture through mulching surface or subsurface (non contaminated with chemicals or weed seeds), imprinting, pitting
  - Treating compacted soils
  - Capturing and holding seeds through imprinting and pitting
  - Seeding (seed treatment) with locally gathered/commercially available seed
  - Individual plantings/Irrigation (costly, uncommon)
  - Erosion control

The evaluation criteria are an initial trigger upon which an evaluation of both the productivity and the visual aspect of the vegetative community would take place, considering targets set for the rehabilitation, such as pertinent factors identified above. Specified levels are those levels where the impact may be unnoticeable and the area may be productive for wildlife in terms of food and shelter. At these levels it is likely that soil condition is returning, and annual plant cover is probably present; therefore ecosystem processes are beginning to successfully operate again.

---

1 For example, if perennial plants A, B, and C have relative densities of 70, 13, and 12 percent, respectively, the dominant species could be species A and any one (or more) of species B or C.



## Appendix G

### Recommended Special Management Actions For the Recovery of the Ash Meadows Gumplant (*Grindelia fraxino-pratensis*) and Amargosa Niterwort (*Nitrophila mohavensis*)<sup>1</sup>

#### Introduction

**Ash Meadows Gumplant:** The Ash Meadows gumplant (*Grindelia fraxino-pratensis*) was published in Notice of Review of 1 July 1975 as threatened (40 FR 27861) and in the 15 December 1980 Notice as Category I: taxa to be considered for threatened or endangered status (45 FR 82512). It was listed as Rare and Endangered by the California Native Plant Society and Endangered by the Northern Nevada Native Plant Society in 1980. This plant was also listed as California State Endangered in 1979 and federally listed as Endangered in 1985.

The Ash Meadows gumplant is an erect biennial or perennial herbaceous plant that is approximately 5-12 decimeters (dm) tall with one to several stems arising from a woody root-stock. The stems are light to reddish brown, glabrous, leafy and branched in their upper halves. The dark green leathery resin-coated leaves are narrow, about 2-7 centimeters (cm) long and 5-12 millimeters (mm) wide and are somewhat sticky to the touch. The basal leaves are longer and wider than the stem leaves. The leaf margin is entire to somewhat toothed at the tip. The inflorescence is openly branched with several heads on the terminal branchlets with head width ranging from 8-10 mm. The involucre are 7-9 mm tall with overlapping resin-dotted phyllaries 3-7 mm long. Ray flowers are mostly 13 in number, golden to lemon yellow and 7-9 mm long. Disk flowers are golden yellow and 4-5 mm long. In bud, the disk flowers are covered with a white gum-like substance; hence, the name gumplant. The achenes are 2.5 - 3.5 mm long which bear two stout awns that are approximately 3-4 mm long. Little is known about this species' life history or habitat requirements due to its limited distribution and individual occurrences.

**Amargosa Niterwort:** The Amargosa niterwort (*Nitrophila mohavensis*) was published in a Notice of Review on 1 July 1975 (40 FR 27833) as Endangered and was proposed as Endangered on 16 June 1976 (41 FR 24539). This plant was California State listed as Endangered in 1979 and federally listed as Endangered in 1980.

The Amargosa niterwort is a low, long-lived erect plant from thick underground roots. It reaches heights up to 8 cm. The leaves are small, approximately 2-3 mm long, thick, fleshy and bright green. They are densely arranged along a reddish-colored stem. The flowers are small and frequently hidden among the upper leaves. The petal-like segments on the flowers are rose-colored when fresh and approximately 2 mm long. When the

---

<sup>1</sup> Both of these species are on the Center for Plant Conservation's list of species expected to go extinct within ten years.



segments become dry, they are brownish in color and somewhat papery to the touch. The anthers are small and 5 in number. The fruit is small and round, with black shiny seeds.

### **Objectives:**

The objective is to minimize the threats that imperil the Ash Meadows gumplant and Amargosa niterwort so that these species can be downlisted. These plants may be proposed for downlisting when their populations and the wetland ecosystem on which they are dependent within the Carson Slough and other habitat in Nevada are secure and self-perpetuating.

Recovery efforts should occur on the following sites:

- Public lands administered by the BLM in the Carson Slough area. The Ash Meadows gumplant is known in only two sites, one in Nye County, Nevada and the other in the Carson Slough area of Inyo County, California, in close proximity to the Amargosa niterwort. These two species are known on a single site (see Chapter 7, Figure 10) on the southwestern edge of Ash Meadows region just west of the Nevada state line in extreme southeastern Inyo County, California, at the Amargosa River drainage (Carson Slough) about three miles northeast of Death Valley Junction.
- Water sources required to perpetuate these areas should be secured and managed.

Specific recommendations, requirements and tasks include:

1. Implement short-term actions critical for the near term survival of the Ash Meadows gumplant and Amargosa niterwort.
  - a. Identify habitat and source water on private, The Nature Conservancy, State, and Federal Lands.
    - (1) Identify habitat
    - (2) Identify groundwater sources and springs
2. Identify and preclude present or threatened destruction, modification, or curtailment of habitat or range.
  - (1) Reduce the major threat from the reduction of free-flowing water through the Carson Slough currently being diverted for farming activities.
  - (2) Reduce the threat of grazing and trampling by horses (both feral and owned).
  - (3) Reduce the threat from the increase of off-road vehicle activities.
  - (4) Reduce the threat to the environment of, and possible type conversion from non-native, weedy, species.



The above mentioned existing threats are all expected to continue for some time into the future and can be considered potential threats for more populations than are currently impacted.

3. Identify and implement measures to protect public land populations.
  - (a) Develop ACEC management strategy within three years.
  - (b) Integrate strategy with the Amargosa River ACEC management planning to address watershed, water quantity and related issues.

## Objectives

The objective is to develop a management strategy for the Ash meadows gumplant and Amargosa niterwort populations within the Amargosa River ACEC. The strategy will be developed for the Ash meadows gumplant and Amargosa niterwort populations within the Amargosa River ACEC. The strategy will be developed for the Ash meadows gumplant and Amargosa niterwort populations within the Amargosa River ACEC.

## Recommended Management Actions

- 1. Develop a management strategy for the Ash meadows gumplant and Amargosa niterwort populations within the Amargosa River ACEC.
- 2. Develop a management strategy for the Ash meadows gumplant and Amargosa niterwort populations within the Amargosa River ACEC.
- 3. Develop a management strategy for the Ash meadows gumplant and Amargosa niterwort populations within the Amargosa River ACEC.
- 4. Develop a management strategy for the Ash meadows gumplant and Amargosa niterwort populations within the Amargosa River ACEC.
- 5. Develop a management strategy for the Ash meadows gumplant and Amargosa niterwort populations within the Amargosa River ACEC.

The management strategy will be developed for the Ash meadows gumplant and Amargosa niterwort populations within the Amargosa River ACEC. The strategy will be developed for the Ash meadows gumplant and Amargosa niterwort populations within the Amargosa River ACEC.

## Management Strategy for the Ash meadows gumplant and Amargosa niterwort







## **Appendix H**

### **Recommended Special Management Actions for the Recovery of the Amargosa Vole**

#### **Introduction**

The Amargosa Vole is a desert sub-species of the widely distributed California Vole. The Amargosa Vole historically inhabited a highly localized and isolated wetland of the central Mojave Desert in extreme southeastern Inyo County, California, near the Inyo – San Bernardino County line. It depends upon, and is closely associated with, wetland vegetation dominated by bulrush. The Amargosa Vole was listed as a California State endangered species on September 2, 1980. (Title 14 California Administrative Code, Section 670.5) and as a Federal endangered species with critical habitat on November 15, 1984 (49 Federal Register (FR): 45160). Reasons for listing include loss of historical habitat, rechannelization of water sources needed to perpetuate habitats, and pumping of groundwater. Based on the high degree of threat and low full recovery potential, the Amargosa Vole has been given a recovery priority of six (6), meaning that it is a sub-species under high threat with a low recovery potential.

#### **Objective**

The objective is to minimize the threats that imperil the Amargosa Vole so that the species can be downlisted to “Threatened” status. The Amargosa Vole may be proposed for downlisting when populations of the vole and the wetland ecosystem on which they are dependent within the ancient Tecopa Lake Basin and within Amargosa Canyon are secure and self-perpetuating.

Recovery efforts should occur on the following five sites:

- Public lands administered by the BLM in the Grimshaw Lake and Amargosa Canyon Areas of Critical Environmental Concern.
- State lands in the northern portion of the Amargosa Canyon
- The BLM lands south of Tecopa Hot Springs
- Private lands containing vole habitat.
- Water sources required to perpetuate these areas, and corridors necessary for maintaining genetic exchange between otherwise isolated vole populations should be secured and managed.

The interim goal is to secure vole populations in wetlands above 1,370 feet (410 meters) elevation. Tasks to achieve the interim goal include securing habitat and the water sources for maintaining these wetlands, and minimizing threats from introduced species.

Specific recommendations, requirements and tasks include:



1. Implement short-term actions critical for the near term survival of the Amargosa Vole.
  - a. Identify Amargosa Vole habitat and source water on private, The Nature Conservancy, State, and Federal Lands.
    - (1) Identify Amargosa Vole Habitat
    - (2) Identify groundwater sources and springs
  - b. Implement measures to secure extant populations and non-occupied habitat; foremost, those above 1,370 feet (410 meters) in elevation and habitats protected against flooding by the historic railbed grading for the Tonopah and Tidewater railroad lines.
    - (1) Secure water sources and water rights for groundwater and springs critical to maintaining and enhancing upland habitats and lowland habitats.
    - (2) Protect wetland habitats from geothermal development.
      - (a) Identify geothermal ownership that can affect upland and protected lowland habitats.
      - (b) Remove geothermal development that has adverse effects on wetlands from current and future leaseings.
    - (3) Remove Tamrisk from upland and protected lowland habitats
    - (4) Maintain integrity of the Tonopah and Tidewater railbed to prevent flooding of existing lowland habitats.
    - (5) Prevent further loss of habitat or water quality by road construction, maintenance, or other construction activities.
    - (6) Replace existing OHV exclusion barrier with a more substantial post and cable barrier.
    - (7) Immediately remove all feral cattle from the Amargosa Canyon
    - (8) Prohibit all camping and campfires on public lands.
  - c. Identify threats to the Amargosa Vole and/or habitat
  - d. Develop interim management plan to protect habitats
  - e. Implement Management Plan
2. Population surveys and assessments.
  - a. Estimate population size of all habitat patches using capture/mark/recapture.
  - b. Obtain demographic data on the Amargosa Vole to determine abundance, distribution, natality, mortality, recruitment, dispersal distance, and rate of population change.
  - c. Collect tissue samples from all new captured animals
  - d. Collate and analyze data annually.
3. Habitat Surveys and assessment.
  - (a) Quantify habitat characteristics around animal capture sites.



- (b) Determine temporal and spacial patterns of habitat use.
  - (c) Evaluate habitat condition annually.
    - (1) Tecopa Lake Basin and Amargosa Canyon.
    - (2) Shoshone area.
  - (d) Develop management protocols for enhancing extant habitat and rehabilitating historical habitat sites
    - (1) Analyze habitat data.
    - (2) Develop management protocols for enhancing extant habitat and rehabilitating historical habitat sites.
4. Genetic Analysis
- a. Analyze genetic data.
  - b. Evaluate progress toward recovery objective
5. Enhance Amargosa Vole populations and habitat.
- a. Determine affects of natural and anthropogenic threats including flooding, spring water flow and flux, vegetation changes, fire, exotic intrusion (plant and animal), pesticides/ rodenticides, and groundwater/ watershed alterations.
  - b. Implement effective habitat/vegetation manipulation that enhances vole habitat and minimizes adverse effects on other sensitive native species.
  - c. Reduce or eliminate competitive faunal species.
  - d. Establish additional Amargosa Vole populations.
    - (1) Determine if establishment or rehabilitation of habitat is necessary.
    - (2) Complete habitat rehabilitation or protective measures, if necessary, prior to reintroducing voles.
    - (3) Introduce voles into the site.
    - (4) Monitor success of the vole population at each transplant site.
    - (5) Continue with transplant program if necessary of feasible.
  - e. Develop map of habitat and population trends.
6. Monitor habitat trends.
- a. Develop monitoring protocol and conduct yearly small mammal and vegetation surveys.
  - b. Update map of habitat and population trends.
  - c. As necessary, modify management plans.
7. Establish a public outreach program.<sup>1</sup>

---

<sup>1</sup> U.S. Fish and Wildlife Service, 1997. Amargosa Vole (*Microtus californicus scirpensis*) Recovery Plan. Portland, Oregon.







# APPENDIX I: SPECIAL STATUS SPECIES WITHIN THE NORTHERN AND EASTERN MOJAVE

## ANIMAL STATUS CODES

### Federal

**Endangered:** Those animals officially listed or proposed for listing as endangered under the Federal Endangered Species Act.

**Threatened:** Those animals officially listed or proposed for listing as threatened under the Federal Endangered Species Act.

**BLM Sensitive :** California Bureau of Land Management Sensitive Species

**Sensitive species are designated by a BLM State Director**

BLM Manual 6840 defines sensitive species as "...those species that are (1) under status review by the Fish and Wildlife Service/National Marine Fisheries Service; or (2) whose numbers are declining so rapidly that Federal listing may become necessary; or (3) with typically small and widely dispersed populations; or (4) those inhabiting ecological refugia or other specialized or unique habitats."

**FSC: Federal Special Concern species** (a "term of art" for former USFWS Category 2 candidates.)

**FWS:MNBMC: The Fish and Wildlife Service: Migratory Nongame Birds of Management Concern:**

Species of migratory nongame birds that are considered to be of concern in the United States because of (1) documented or apparent population declines, (2) small or restricted populations, or (3) dependence on restricted or vulnerable habitats

### State

**Endangered:** Those animals officially listed or proposed for listing as endangered under the California Endangered Species Act.

**Threatened:** Those animals officially listed or proposed for listing as threatened under the California Endangered Species Act.

**CDFG:CSC: California Special Concern species:**

The Department has designated certain vertebrate species as CDFG:CSC because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction.

**CDFG: Fully Protected and Protected:**

Fully Protected and Protected species may not be taken or possessed without a permit from the Fish and Game Commission and/or the Department of Fish and Game.

ANIMAL SPECIES		LISTING STATUS	
Common Name	Scientific Name	Federal	State
BIRDS			
Swainson's hawk	<i>Buteo swainsoni</i>		Threatened
Western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	FWS: MNBMC	Endangered
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	Endangered	
Least bells vireo	<i>Vireo bellii pusillus</i>	Endangered FWS:MNBMC	Endangered
Inyo California towhee	<i>Pipilo crissalis</i>	Threatened	Endangered
Cooper's hawk	<i>Accipiter cooperi</i>		CDFG:CSC
Tricolored blackbird	<i>Agelaius tricolor</i>	BLM Sensitive, FSC FWS: MNBMC	CDFG:CSC
Golden eagle	<i>Aquila chrysaetos</i>		CDFG Fully Protected
Long-eared owl	<i>Asio otus</i>		CDFG:CSC
Burrowing owl	<i>Athene cunicularia hypugea</i>	BLM Sensitive FWS: MNBMC	CDFG:CSC
Ferruginous hawk	<i>Buteo regalis</i>	FSC, FWS: MNBMC	CDFG:CSC



## Appendix I: Species of Special Consideration within NEMO

Western snowy plover	<i>Charadrius alexandrinus nivosus</i> Inland populations	FWS: MNBMC	CDFG:CSC
Northern harrier	<i>Circus cyaneus</i>		CDFG:CSC
Yellow warbler	<i>Dendroica petechia brewsteri</i>		CDFG:CSC
Prairie falcon	<i>Falco mexicanus</i>		CDFG:CSC
Yellow-breasted chat	<i>Icteria virens</i>		CDFG:CSC
Western least bittern	<i>Ixobrychus exilis hesperis</i>	FSC, FWS: MNBMC	CDFG:CSC
California gray-headed junco	<i>Junco hyemalis caniceps</i>	FWS: MNBMC	CDFG:CSC
Loggerhead shrike	<i>Lanius ludovicianus</i>	FSC, FWS: MNBMC	CDFG:CSC
Brown-crested flycatcher	<i>Myiarchus tyrannulus</i>		CDFG:CSC
Hepatic tanager	<i>Piranga flava</i>		CDFG:CSC
Summer tanager	<i>Piranga rubra</i>		CDFG:CSC
White-faced ibis	<i>Plegadis chihi</i>	FSC, FWS: MNBMC	CDFG:CSC
Vermilion flycatcher	<i>Pyrocephalus rubinus</i>		CDFG:CSC
Bendire's thrasher	<i>Toxostoma bendirei</i>	BLM Sensitive FWS: MNBMC	CDFG:CSC
Crissale thrasher	<i>Toxostoma crissale</i>		CDFG:CSC
Le conte's thrasher	<i>Toxostoma lecontei</i>	BLM Sensitive	CDFG:CSC
Virginia's warbler	<i>Vermivora virginiae</i>		CDFG:CSC
Gray vireo	<i>Vireo vicinior</i>	BLM Sensitive	CDFG:CSC
<b>MAMMALS</b>			
Amargosa vole	<i>Microtus californicus scirpensis</i>	Endangered	Endangered
Mohave ground squirrel	<i>Spermophilus mohavensis</i>	FSC	Threatened
Pallid bat	<i>Antrozous pallidus</i>	BLM Sensitive	CDFG:CSC
Townsend's western big-eared bat	<i>Corynorhinus townsendii townsendii</i>	BLM Sensitive, FSC	CDFG:CSC
Occult little brown bat	<i>Myotis lucifugus occultus</i>	FSC	CDFG:CSC
Fringed myotis	<i>Myotis thysanodes</i>	BLM Sensitive, FSC	
Western mastiff bat	<i>Eumops perotis</i>	BLM Sensitive, FSC	CDFG:CSC
Spotted bat	<i>Euderma maculatum</i>	BLM Sensitive, FSC	CDFG:CSC
Western small-footed myotis	<i>Myotis ciliolabrum</i>	BLM Sensitive, FSC	
Long-eared myotis	<i>Myotis evotis</i>	BLM Sensitive, FSC	
California leaf-nosed bat	<i>Macrotus californicus</i>	BLM Sensitive, FSC	CDFG:CSC
Desert bighorn sheep	<i>Ovis canadensis nelsoni</i>	BLM Sensitive	CDFG Fully Protected
<b>AMPHIBIANS</b>			
Black toad	<i>Bufo exsul</i>		Endangered
Inyo Mountains slender salamander	<i>Batrachoseps campi</i>	BLM Sensitive	CDFG Protected, CDFG:CSC
<b>REPTILES</b>			
Desert tortoise	<i>Gopherus agassizii</i>	Threatened	Threatened
Panamint alligator lizard	<i>Elgaria panamintinus</i>	BLM Sensitive	CDFG Protected
Banded gila monster	<i>Heloderma suspectum cinctum</i>	BLM Sensitive, FSC	CDFG Protected, CDFG:CSC
<b>FISH</b>			
Amargosa River pupfish	<i>Cyprinodon nevadensis amargosae</i>	BLM Sensitive	CDFG:CSC
Shoshone pupfish	<i>Cyprinodon nevadensis shoshone</i>	FSC	CDFG:CSC
Amargosa Canyon speckled dace	<i>Rhinichthys osculus</i> ssp 1	BLM Sensitive, FSC	CDFG:CSC
<b>INSECTS</b>			
Shoshone cave whip-scorpion	<i>Trithyreus shoshonensis</i>	BLM Sensitive	



## PLANTS OF SPECIAL CONSIDERATION

## PLANT STATUS EXPLANATION

## FEDERAL

**Endangered:** Those plants officially listed or proposed for listing as endangered under the Endangered Species Act.

**Threatened:** Those plants officially listed or proposed for listing as threatened under the Endangered Species Act.

**BLM Sensitive:** California Bureau of Land Management Sensitive Species **Sensitive species are designated by a BLM State Director...**

BLM Manual 6840 defines sensitive species as "...those species that are (1) under status review by the Fish and Wildlife Service and the National Marine Fisheries Service; or (2) whose numbers are declining so rapidly that Federal listing may become necessary; or (3) with typically small and widely dispersed populations; or (4) those inhabiting ecological refugia or other specialized or unique habitats.

**FSC:** Federal Species of Special Concern

## STATE

**Rare, Threatened or Endangered:** Those plants officially listed or proposed for listing under the California Endangered Species Act.

**NVCE:** Critically Endangered in Nevada.

**NVCE#:** Recommended for Critically Endangered List pending formal listing.

**CNPS:** The California Native Plant Society Lists

List 1A: Plants presumed extinct in California

List 1B: Plants Rare, Threatened, or Endangered in California and elsewhere

List 2: Plants Rare, Threatened, or Endangered in California, but more common elsewhere

List 3: Plants about which we need more information-A review list

List 4: Plants of limited distribution (significant locally)-A watch list

## PLANT SPECIES OF SPECIAL CONSIDERATION

PLANT SPECIES		LISTING STATUS		CNPS
COMMON NAME	SCIENTIFIC NAME	FEDERAL	STATE	CNPS
Curved-pod Milk-vetch	<i>Astragalus mohavensis</i> var. <i>hemigyris</i>	FSC		1A
July gold	<i>Dedeckera eurekaensis</i>	FSC	CA Rare	1B
Forked buckwheat	<i>Eriogonum bifurcatum</i>	FSC		1B
Kingston mountain bedstraw	<i>Galium hilendiae</i> ssp. <i>kingstonense</i>	BLM Sensitive		1B
Ash meadows gumplant	<i>Grindelia fraxino-pratensis</i>	Threatened		1B
Amargosa niterwort	<i>Nitrophila mohavensis</i>	Endangered	CA Endangered	1B
Shining Milk-vetch	<i>Astragalus lentiginosus</i> var. <i>micans</i>	FSC		1B
Sodaville Milk-vetch	<i>Astragalus lentiginosus</i> var. <i>sesquimetralis</i>	FSC	CA Endangered	1B
Spring-loving centauray	<i>Centaurium namophilum</i>	Threatened		
Tecopa Birds-beak	<i>Cordylanthus tecopensis</i>	BLM Sensitive- FSC		1B
Thorne's buckwheat	<i>Eriogonum ericifolium</i> var. <i>thornei</i>	FSC	CA Endangered	1B
Darwin rock cress	<i>Arabis pulchra</i> var. <i>munciensis</i>	BLM Sensitive		2
Shockley's rock cress	<i>Arabis shockleyi</i>			2
White bear poppy	<i>Arctomecon merriamii</i>	FSC		2
Cloak fern	<i>Argyrochosma limitanea</i> var. <i>limitanea</i>			2
Playa milk-vetch	<i>Astragalus allochorous</i> var. <i>playanus</i>			2
Darwin mesa milk-vetch	<i>Astragalus atratus</i> var. <i>mensanus</i>	BLM Sensitive		1B
Black milk-vetch	<i>Astragalus funereus</i>	BLM Sensitive - FSC		1B
Geyer's milk-vetch	<i>Astragalus geyeri</i> var. <i>geyeri</i>	BLM Sensitive		2
Gilman's milk-vetch	<i>Astragalus gilmanii</i>	FSC		1B
Little big-pod milk-vetch	<i>Astragalus platytropis</i>			2
Preuss's milk-vetch	<i>Astragalus preussii</i> var. <i>preussii</i>			2
Naked milk-vetch	<i>Astragalus serenoii</i> var. <i>shockleyi</i>			2
Scaly cloak fern	<i>Astroleps cochisensis</i>			2
Ayenia	<i>Ayenia compacta</i>			2
Fremont barberry	<i>Berberis fremontii</i>			3
King's eyelash grass	<i>Blepharidachne kingii</i>			2
Red grama	<i>Bouteloua trifida</i>			2
Crucifixion thorn	<i>Castela emoryi</i>			2
Jaeger's caulostramina	<i>Caulostramina jaegeri</i>	BLM Sensitive - FSC		1B
Wootton's lace fern	<i>Cheilanthes woottonii</i>			2
Desert birds-beak	<i>Cordylanthus eremicus</i> ssp. <i>eremicus</i>			4



Appendix I: Species of Special Consideration within NEMO

Purple bird's-beak	<i>Cordylanthus parviflorus</i>			2
Gilman's cymopterus	<i>Cymopterus gilmanii</i>			2
Ripley's cymopterus	<i>Cymopterus ripleyi</i> var. <i>saniculoides</i>			1B
Panamint dudleya	<i>Dudleya saxosa</i> ssp. <i>saxosa</i>	FSC		1B
Howe's hedgehog cactus	<i>Echinocereus engelmannii</i> var. <i>howei</i>	BLM Sensitive - FSC		1B
Panamint daisy	<i>Enceliopsis covillei</i>	BLM Sensitive - FSC		1B
Nine-awned pappus grass	<i>Enneapogon desvauxii</i>			2
Gilman's goldenbush	<i>Ericameria gilmanii</i>			1B
Reveal's buckwheat	<i>Eriogonum contiguum</i>			2
Wildrose canyon buckwheat	<i>Eriogonum eremicola</i>	BLM Sensitive - FSC		1B
Jointed buckwheat	<i>Eriogonum intrafractum</i>	FSC		1B
Panamint mountains buckwheat	<i>Eriogonum microthecum</i> var. <i>panamintense</i>	BLM Sensitive - FSC		1B
Juniper buckwheat	<i>Eriogonum umbellatum</i> var. <i>juniporinum</i>			4
Ripley's gilia	<i>Gilia ripleyi</i>			2
Golden carpet	<i>Gilmania luteola</i>			1B
Pungent glossopetalon	<i>Glossopetalon pungens</i>	BLM Sensitive - FSC		1B
Inyo hulsea	<i>Hulsea vestita</i> ssp. <i>invoensis</i>	BLM Sensitive		2
Yellow ivesia	<i>Ivesia arizonica</i> var. <i>arizonica</i>			3
Jaeger's ivesia	<i>Ivesia jaegeri</i>	BLM Sensitive - FSC		1B
Kingston mountains ivesia	<i>Ivesia patellifera</i>	BLM Sensitive - FSC		1B
Sand linanthus	<i>Linanthus arenicola</i>			2
Scrub lotus	<i>Lotus argyraeus</i> var. <i>multicaulis</i>			1B
Providence mountains lotus	<i>Lotus argyraeus</i> var. <i>notitius</i>			1B
Panamint mountains lupine	<i>Lupinus magnificus</i> var. <i>magnificus</i>	BLM Sensitive - FSC		1B
Wolftail	<i>Lycurus phleoides</i> var. <i>phleoides</i>			2
Spearleaf	<i>Matelea parvifolia</i>			2
Violet twining snapdragon	<i>Maurandya antirrhiniflora</i> ssp. <i>antirrhiniflora</i>			2
Rock lady	<i>Maurandya petrophila</i>	FSC	CA Rare	1B
Utah monkeyflower	<i>Mimulus glabratus</i> ssp. <i>utahensis</i>			2
Appressed muhly	<i>Muhlenbergia appressa</i>			2
Tough muhly	<i>Muhlenbergia arsenei</i>			2
Delicate muhly	<i>Muhlenbergia fragilis</i>			2
Few-flowered Muhly	<i>Muhlenbergia pauciflora</i>			2
False Buffalo-grass	<i>Munroa squarrosa</i>			2
Forked purple mat	<i>Nama dichotomum</i> var. <i>dichotomum</i>			2
Slender Woolly-heads	<i>Nemacaulis denudata</i> var. <i>gracilis</i>			2
Curved-spine Beavertail	<i>Opuntia curvospina</i>			2
Beautiful cholla	<i>Opuntia pulchella</i>			2
Watson's oxytheca	<i>Oxytheca watsonii</i>			2
Cliff brake	<i>Pellaea truncata</i>			2
Limestone beardtongue	<i>Penstemon calcareus</i>			2
Death valley beardtongue	<i>Penstemon fruticiformis</i> var. <i>amargosae</i>	BLM Sensitive - FSC		1B
Stephen's beardtongue	<i>Penstemon stephensii</i>	BLM Sensitive - FSC		1B
Inyo rock daisy	<i>Perityle inyoensis</i>	BLM Sensitive		1B
Hanaupah rock daisy	<i>Perityle villosa</i>	BLM Sensitive		1B
Death valley sandpaper plant	<i>Petalonyx thurberi</i> ssp. <i>gilmanii</i>	BLM Sensitive - FSC		1B
Saline valley phacelia	<i>Phacelia amabilis</i>	FSC		3
Aven nelson's phacelia	<i>Phacelia anelsonii</i>			2
Death Valley Round-leaved Phacelia	<i>Phacelia mustelina</i>	BLM Sensitive		1B
Goodding's phacelia	<i>Phacelia pulchella</i> var. <i>gooddingii</i>			2
Two-needle pinyon pine	<i>Pinus edulis</i>			3
Small-flowered rice grass	<i>Piptatherum micranthum</i>			2
Desert popcorn-flower	<i>Plagiobothrys salsus</i>			2
Notch-beaked milkwort	<i>Polygala heterorhyncha</i>			2
Narrow-leaved cottonwood	<i>Populus angustifolia</i>			2
Abert's sanvitalia	<i>Sanvitalia abertii</i>			2
Burro grass	<i>Scleropogon brevifolius</i>			2



# Appendix I: Species of Special Consideration within NEMO

Desert wing-fruit	<i>Selinocarpus nevadensis</i>			2
Rusby's desert mallow	<i>Sphaeralcea rusbyi</i> ssp. <i>eremicola</i>	BLM Sensitive		1B
Holly-leaved tetracoccus	<i>Tetracoccus ilicifolius</i>			1B
Plummer's woodsia	<i>Woodsia plummerae</i>			2







## APPENDIX J

UPLAND PUBLIC LANDS ASSESSMENT CRITERIA			
Indicators	Healthy	At Risk	Unhealthy
Phase 1: Soil Stability and Watershed Function			
A-horizon	Present and Distribution unfragmented	Present but fragmented distribution developing	Absent, or present only in association prominent plants or with other obstructions
Pedestaling	No pedestaling of plants or rocks	Pedestals present, but on mature plants only; no roots exposed	Most plants and rocks pedestaled; Roots exposed
Rills and gullies	Absent, or with blunted and muted feature	Small, embryonic, and not connected into dendritic pattern	Well defined, actively expanding, dendritic pattern established
Scouring or sheet erosion	No visible scouring or sheet erosion	Patches of bare soil or scours developing	Bare areas and scours well developed and contiguous
Sedimentation or dunes	No visible soil deposition	Soil accumulating around plants or small obstructions	Soil accumulating in large barren deposits or dunes or behind large obstructions
Phase 2: Distribution of nutrient cycling and energy flow			
Distribution of plants	Plants well distributed across site	Plant distribution becoming fragmented	Plants clumped, often in association with prominent individuals; large bare areas between clumps
Litter distribution and incorporation	Uniform across site	Becoming associated with prominent plants or other obstructions	Litter largely absent
Root distribution	Community structure results in rooting throughout the available soil profile	Community structure results in absence of roots from portions of the available soil profile	Community structure results in rooting in only one portion of the available soil profile
Distribution of photosynthesis	Photosynthetic activity occurs throughout the period suitable for plant growth	Most photosynthetic activity occurs during one portion of the period suitable for plant growth	Little or no photosynthetic activity on location during most of the period suitable for plant growth
Phase 3: Recovery mechanisms			
Age-class distribution	Distribution reflects all species	Seedlings and young plants missing	Primarily old or deteriorating plants present
Plant vigor	Plants display normal growth form	Plants developing abnormal growth form	Most plants in abnormal growth form
Germination microsite	Microsites present and distributed across the site	Developing crusts, soil movement, or other factors degrading microsites; developing crusts are fragile	Soil movement or crusting sufficient to inhibit most germination and seedling establishment



## DISCUSSION OF PROPER FUNCTIONING CONDITION (PFC)

### PFC -- PROPER FUNCTIONING CONDITION

#### WHAT IT IS - WHAT IT ISN'T

**PFC is:** A methodology for assessing the physical functioning of riparian and wetland areas. The term PFC is used to describe both the **assessment** process, and a defined, on-the-ground **condition** of a riparian-wetland area. In either case, PFC defines a minimum or starting point.

The PFC **assessment** provides a consistent approach for assessing the physical functioning of riparian-wetland areas through consideration of hydrology, vegetation, and soil/landform attributes. The PFC assessment synthesizes information that is foundational to determining the overall health of a riparian-wetland area.

The on-the-ground **condition** termed PFC refers to *how well* the physical processes are functioning. PFC is a state of resiliency that will allow a riparian-wetland system to hold together during a 25 to 30 year flow event, sustaining that system's ability to produce values related to both physical and biological attributes.

*PFC isn't:* The sole methodology for assessing the health of the aquatic or terrestrial components of a riparian-wetland area.

*PFC isn't:* A replacement for inventory or monitoring protocols designed to yield information on the "biology" of the plants and animals dependent on the riparian-wetland area.

**PFC can:** Provide information on whether a riparian-wetland area is physically functioning in a manner which will allow the maintenance or recovery of desired values, e.g., fish habitat, neotropical birds, or forage, over time.

*PFC isn't:* Desired (future) condition. It is a prerequisite to achieving desired condition.

*PFC can't:* Provide more than strong clues as to the actual condition of habitat for plants and animals. Generally a riparian-wetland area in a physically non-functioning condition will not provide quality habitat conditions. A riparian-wetland area that has recovered to a *proper functioning condition* would either be providing quality habitat conditions, or would be moving in that direction if recovery is allowed to continue. A riparian-wetland area that is functioning-at-risk would likely lose any habitat that exists in a 25 to 30 year flow event.

**Therefore:** To obtain a complete picture of riparian-wetland area health, including the biological side, one must have information on *both* physical status, provided through the PFC assessment, and biological habitat quality. Neither will provide a complete picture when analyzed in isolation. In



most cases proper functioning condition will be a prerequisite to achieving and maintaining habitat quality.

**PFC is:** A useful tool for prioritizing restoration activities. By concentrating on the “at risk” systems, restoration activities can save many riparian-wetland areas from degrading to a non functioning condition. Once a system is non-functional the effort, cost, and time required for recovery is dramatically increased. Restoration of non functional systems should be reserved for those situations where the riparian-wetland has reached a point where recovery *is possible*, when efforts are not at *the expense* of "at risk" systems, or when unique opportunities exist. At the same time, systems that are properly functioning are not the highest priorities for restoration. Management of these systems should be continued to maintain PFC and further recovery towards desired condition.

**PFC is:** A useful tool for determining appropriate timing and design of riparian-wetland restoration projects (including structural and management changes). It can identify situations where instream structures are either entirely inappropriate or premature.

**PFC is:** A useful tool that can be used in watershed analysis. While the methodology and resultant data is "reach based", the ratings can be aggregated and analyzed at the watershed scale. PFC, along with other watershed and habitat condition information helps provide a good picture of watershed health and the possible causal factors affecting watershed health. Use of PFC will help to identify watershed scale problems and suggest management remedies and priorities.

*PFC isn't:* Watershed analysis in and of itself, or a replacement for watershed analysis.

**PFC is:** A useful tool for designing implementation and effectiveness monitoring plans. By concentrating implementation monitoring efforts on the “no” answers, greater efficiency of resources (people, dollars, time) can be achieved. The limited resources of the local manager in monitoring riparian-wetland parameters can be prioritized to those factors that are currently “out of range” or at risk of going out of range. The role of research may extend to validation monitoring of many of the parameters.

*PFC wasn't:* Designed to be a long term monitoring tool but it may be an appropriate part of a well designed monitoring program.

*PFC isn't:* Designed to provide monitoring answers about attainment of desired conditions. However, it can be used to provide a thought process on whether a management strategy is likely to allow attainment of desired conditions.

**PFC can:** Reduce the frequency and sometimes the extent of more data and labor intensive inventories. PFC can reduce process by concentrating efforts on the most significant problem areas first and thereby increasing efficiency.

*PFC can't:* Eliminate the need for more intensive inventory and monitoring protocols. These will often be needed to validate that riparian-wetland area recovery is indeed moving toward or has achieved



desired conditions, e.g., good quality habitat; or simply establish what the existing habitat quality is.

**PFC is:** A qualitative assessment based on quantitative science. The PFC assessment is intended for individuals with local, on-the-ground experience in the kind of quantitative sampling techniques that support the checklist. These quantitative techniques are encouraged in conjunction with the PFC assessment for individual calibration, where answers are uncertain, or where experience is limited. PFC is also an appropriate starting point for determining and prioritizing the type and location of quantitative inventory or monitoring necessary.

*PFC isn't:* A replacement for quantitative inventory or monitoring protocols. PFC is meant to complement more detailed methods by providing a way to synthesize data and communicate results.

### **PFC Checklist**

The following section contains the PFC checklist as used by BLM staff and others in the field. Immediately following are the general instructions, and then the two pages of the checklist itself.

#### **General Instructions**

- 1) The concept "**Relative to Capability**" applies wherever it may be inferred.
- 2) This checklist constitutes the **Minimum National Standards** required to determine Proper Functioning Condition of lotic riparian-wetland areas.
- 3) As a minimum, an **ID Team** will use this checklist to determine the degree of function of a riparian-wetland area.
- 4) Mark one box for each element. Elements are numbered for the purpose of cataloging comments. The numbers do not declare importance.
- 5) For any item marked "**No**," the severity of the condition must be explained in the "**Remarks**" section and must be a subject for discussion with the ID Team in determining riparian-wetland functionality. Using the "**Remarks**" section to also explain items marked "**Yes**" is encouraged but not required.
- 6) Based on the ID Team's discussion, "**functional rating**" will be resolved and the checklist's summary section will be completed.
- 7) Establish photo points where possible to document the site.



**Standard Lotic Checklist**

Name of Riparian-Wetland Area: \_\_\_\_\_

Date: \_\_\_\_\_ Area/Segment ID: \_\_\_\_\_ Miles: \_\_\_\_\_

ID Team Observers: \_\_\_\_\_

Yes	No	N/A	HYDROLOGIC
			1) Floodplain inundated in "relatively frequent" events (1-3 years)
			2) Active/stable beaver dams
			3) Sinuosity, width/depth ratio, and gradient are in balance with the landscape setting (i.e., landform, geology, and bioclimatic region)
			4) Riparian zone is widening or has achieved potential extent
			5) Upland watershed not contributing to riparian degradation

Yes	No	N/A	VEGETATIVE
			6) Diverse age-class distribution (recruitment for maintenance/recovery)
			7) Diverse composition of vegetation (for maintenance/recovery)
			8) Species present indicate maintenance of riparian soil moisture characteristics
			9) Streambank vegetation is comprised of those plants or plant communities that have root masses capable of withstanding high streamflow events
			10) Riparian plants exhibit high vigor
			11) Adequate vegetative cover present to protect banks and dissipate energy during high flows
			12) Plant communities in the riparian area are an adequate source of coarse and/or large woody debris

Yes	No	N/A	SOILS-EROSION DEPOSITION
			13) Floodplain and channel characteristics (i.e., rocks, overflow channels, coarse and/or large woody debris) adequate to dissipate energy
			14) Point bars are revegetating
			15) Lateral stream movement is associated with natural sinuosity
			16) System is vertically stable
			17) Stream is in balance with the water and sediment being supplied by the watershed (i.e., no excessive erosion or deposition)

**Remarks**



---

---

---

---

---

---

### Summary Determination

#### Functional Rating:

Proper Functioning Condition

---

Functional -- At Risk

---

Nonfunctional

---

Unknown

---

#### Trend for Functional -- At Risk:

Upward

---

Downward

---

Not Apparent

---

#### Are factors contributing to unacceptable conditions outside BLM's control or management?

Yes

---

No

---

#### If yes, what are those factors?

☐ Flow regulations

☐ Mining activities

☐ Upstream channel conditions

☐ Channelization

☐ Road encroachment

☐ Oil Field water discharge

☐ Augmented flows

☐ Other (specify) 

---



**Lentic Standard Checklist**

Name of Riparian-Wetland Area: \_\_\_\_\_

Date: \_\_\_\_\_ Area/Segment ID: \_\_\_\_\_ Acres: \_\_\_\_\_

ID Team Observers: \_\_\_\_\_

Yes	No	N/A	<b>HYDROLOGIC</b>
			1) Riparian-wetland area is saturated at or near the surface or inundated in "relatively frequent" events (1-3 years)
			2) Fluctuation of water levels is not excessive
			3) Riparian-wetland zone is enlarging or has achieved potential extent
			4) Upland watershed not contributing to riparian-wetland degradation
			5) Water quality is sufficient to support riparian-wetland plants
			6) Natural surface or subsurface flow patterns are not altered by disturbance (i.e., hoof action, dams, dikes, trails, roads, rills, gullies, drilling activities)
			7) Structure accommodates safe passage of flows (e.g., no headcut affecting dam or spillway)

Yes	No	N/A	<b>VEGETATION</b>
			8) Diverse age-class distribution (recruitment for maintenance/recovery)
			9) Diverse composition of vegetation (for maintenance/recovery)
			10) Species present indicate maintenance of riparian-wetland soil moisture characteristics
			11) Vegetation is comprised of those plants or plant communities that have root masses capable of withstanding wind events, wave flow events, or overland flows (e.g., storm events, snow melt)
			12) Riparian-wetland plants exhibit high vigor
			13) Adequate vegetative cover present to protect shoreline/soil surface and dissipate energy during high wind and wave events or overland flows
			14) Frost or abnormal hydrologic heaving is not present
			15) Favorable microsite condition (i.e., woody debris, water temperature, etc.) is maintained by adjacent site characteristics

Yes	No	N/A	<b>SOILS-EROSION DEPOSITION</b>
			16) Accumulation of chemicals affecting plant productivity/composition is not apparent
			17) Saturation of soils (i.e., ponding, flooding frequency and duration) is sufficient to compose and maintain hydric soils
			18) Underlying geologic structure/soil materials/permafrost is capable of restricting water percolation
			19) Riparian-wetland is in balance with the water and sediment being supplied with the watershed (i.e., no excessive erosion or deposition)
			20) Islands and shoreline characteristics (i.e., rocks, coarse and/or large woody debris) adequate to dissipate wind and wave event energies



Sl. No.	Particulars	Amount
1	...	...
2	...	...
3	...	...
4	...	...
5	...	...
6	...	...
7	...	...
8	...	...
9	...	...
10	...	...
11	...	...
12	...	...
13	...	...
14	...	...
15	...	...
16	...	...
17	...	...
18	...	...
19	...	...
20	...	...
21	...	...
22	...	...
23	...	...
24	...	...
25	...	...
26	...	...
27	...	...
28	...	...
29	...	...
30	...	...
31	...	...
32	...	...
33	...	...
34	...	...
35	...	...
36	...	...
37	...	...
38	...	...
39	...	...
40	...	...
41	...	...
42	...	...
43	...	...
44	...	...
45	...	...
46	...	...
47	...	...
48	...	...
49	...	...
50	...	...
51	...	...
52	...	...
53	...	...
54	...	...
55	...	...
56	...	...
57	...	...
58	...	...
59	...	...
60	...	...
61	...	...
62	...	...
63	...	...
64	...	...
65	...	...
66	...	...
67	...	...
68	...	...
69	...	...
70	...	...
71	...	...
72	...	...
73	...	...
74	...	...
75	...	...
76	...	...
77	...	...
78	...	...
79	...	...
80	...	...
81	...	...
82	...	...
83	...	...
84	...	...
85	...	...
86	...	...
87	...	...
88	...	...
89	...	...
90	...	...
91	...	...
92	...	...
93	...	...
94	...	...
95	...	...
96	...	...
97	...	...
98	...	...
99	...	...
100	...	...

**Functional Rating:**

### Proper Functioning Condition

## Functional--At Risk

## Nonfunctional

## Unknown

### Trend for Functional--At Risk

Upward

## Downward

**Not Apparent**

**Are factors contributing to unacceptable conditions outside BLM's control or management?**

**Yes**

No

**If yes, what are those factors?**

## Dewatering

## Mining activities

### Watershed condition

### Dredging activities

## Road encroachment

### Land ownership

Other (specify) \_\_\_\_\_



# Appendix J: Upland Public Lands Assessment Criteria / Proper Functioning Condition

Proper Functioning Condition (PFC) ratings for evaluated desert springs, riverine segments and tributaries in various regions of the nemo planning area.

<b>Desert Spring Site or Riverine Segment</b>	<b>NEMO Region</b>	<b>PFC Rating</b>
Amargosa River-Amargosa Canyon to Dumont Reach	Tecopa	FAR-UT
Amargosa River-Grimshaw Lake	Hot Springs	FAR-DT
Amargosa River-Shoshone to Amargosa Canyon Reach	Shoshone	FAR-NT
Amargosa River-Nevada State Line to Shoshone Reach	Death Valley Junction	PFC
China Ranch Wash	Tecopa	PFC
Lower Carson Slough	DV Junction	PFC
Amargosa Spring	Silurian Valley	PFC
Corral Spring	California Valley	FAR-DT
Coyote Holes Spring	Kingston Wash	FAR-DT?
Crystal Spring	Kingston Mtns	FAR-UT
Dog Boots Spring	Ibex Hills	PFC
Sparrow Seep	Ibex Hills	PFC
Horsethief Spring	Kingston Mtns.	FAR-UT
Kingston Spring	Kingston Wash	FAR-NT
Old Mormon	Avawatz Mtns.	NF
Owl Hole Spring	Owlshead Mtns.	NF
Quail Spring	Owlshead Mtns.	FAR-DT
Salt Creek	Silurian Valley	FAR-UT
Smith Spring	Kingston Mtns.	FAR-UT
Tule Spring	California Valley	FAR-DT
Twelvemile Spring	Chicago Valley	FAR-DT
Weaverdick Spring	Avawatz Mtns.	FAR-NT
<b>FAR=FUNCTIONING AT RISK; DT=DOWNWARD TREND; NT=NO APPARENT TREND;  UT=UPWARD TREND; NF=NON-FUNCTIONAL; AND PFC=PROPER FUNCTIONING CONDITION.</b>		







## APPENDIX K

### CURRENT MANAGEMENT SITUATION

The purpose of this appendix is to document the current public land management policies in those portions of the Northern and Eastern Mojave Planning Area (NEMO Planning Area) as administered by the Bureau of Land Management (BLM). This evaluation will aid in defining the No Action alternative and alternatives proposed in Chapter 2 of this document. The need for revision of land use policies in the NEMO Planning Area is based largely on the USFWS listing of the desert tortoise (as a threatened species) and several other species under the Federal Endangered Species Act since signing of the California Desert Conservation Area Plan (*CDCA Plan*) (BLM 1980), tortoise population declines, the recommendations in the 1994 Desert Tortoise (Mojave Population) Recovery Plan<sup>1</sup>. Additional issues include the adoption of National Standards and Guidelines and the need to adopt regional Standards for Public Land Health and Guidelines for Grazing Management, Congressional designation of wilderness and release of some wilderness study areas from further consideration.

### APPLICABLE FEDERAL AND STATE LAWS

The Bureau of Land Management operates under a number of federal and state laws and regulations. The following is a brief listing of the major laws that affect BLM's management of public lands. Some of these laws are specifically referenced within this EIS and some are here as reference. Decisions within the EIS will not affect BLM's responsibility to adhere to and/or enforce these laws.

#### FEDERAL LAWS

**National Environmental Policy Act (NEPA):** NEPA requires all federal agencies to analyze the environmental impacts of any proposed action affecting public lands or resources, to involve the public in decision making, and to disclose environmental impacts to the public. NEPA also requires that the analysis be interdisciplinary and issue driven and that the cumulative and indirect effects be reported. An EIS is required for any major federal action significantly affecting the quality of the human environment.

**Taylor Grazing Act (TGA):** With amendments, this act is the basic legislative authority governing grazing use on the vacant public lands of the United States.

**Federal Land Policy and Management Act (FLPMA):** This law established public land policy providing for the retention and management of the public lands held in Federal ownership, including special provisions for land use planning and range management.

---

<sup>1</sup>Recovery Plan (USFWS 1994a) (see Sec. 3.1.3 - *Desert Tortoise (Mojave Population) Recovery Plan*)



**Public Rangelands Improvement Act (PRIA):** This legislation of 1978 further supports the authority of the Taylor Grazing Act and the Federal Land Policy and Management Act by placing special emphasis for the improvement of rangeland conditions.

**Wild Free-Roaming Horse and Burro Act:** This act provides for the protection, management, and control of wild horses and burros on public lands administered by the BLM and the U.S. Forest Service. The basic goal is to keep the wild horse herds from disappearing, yet keep the herds at appropriate management levels to maintain a healthy functioning ecosystem. The act allows removal of animals if necessary to "restore a thriving natural ecological balance to the range, and protect the range from the deterioration associated with overpopulation."

**Endangered Species Act (ESA):** This act requires the federal land management agencies to protect and enhance all species and their habitats on federal lands that are listed as endangered, threatened, or proposed for listing. Included in this act in Section 7 is a required process for all federal agencies to consult with the U.S. Fish and Wildlife Service regarding any federal action that may affect a federally listed threatened or endangered species.

**Clean Water Act (CWA):** This law's objective, administered by the U.S. Environmental Protection Agency (EPA), is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. It directs the federal agencies to comply with water quality standards, including initiating actions to control non-point sources of pollution such as grazing, as determined by each respective State government and as approved by EPA.

**Coastal Zone Act Re-authorization (CZARA):** This act is applicable to all waters in California and, as amended in 1990, places additional requirements on the states to address non-point source pollution in several categories, including rangeland. The federal agencies, such as the Bureau of Land Management are to cooperate with the state in fulfilling these requirements.

**Federal Noxious Weed Act:** This 1974 act, as amended in 1990 (Section 15 of the act), adds further responsibility for the federal land management agencies, in cooperation with the respective state agencies, to actively pursue the control of undesirable plants using an integrated management approach.

**Antiquities Act of 1906 and amendments:** This act provides for the protection of historic and prehistoric sites and objects of antiquity on Federal lands; and authorizes scientific investigation of such sites and antiquities, subject to permits and other regulatory requirements. Paleontological resources are also covered by this act.

**Executive Order 13007:** This executive order affirms that Native Americans have the right to access specific spiritual and sacred sites on federal lands as long as that access is not inconsistent with the administrative goals of the agency.



**Archeological Resources Protection Act:** This act prohibits the removal, sale, receipt, and interstate transportation of archeological resources obtained illegally (without permits) from public or Indian lands and authorizes agency permit procedures for investigations of archeological resources on public lands under the agency's control. Amendments state that the Secretaries of the Interior, Agriculture and Defense shall develop plans for surveying the lands under their control to determine the nature and extent of archeological resources, prepare a schedule for surveying those lands that are likely to contain the most scientifically valuable archeological resources, and develop documents for reporting suspected violations. Tribes are given 30 days to comment on permits for the excavation of archeological resources within their "aboriginal territory."

**National Historic Preservation Act of 1966 (NHPA):** This act established historic preservation as a national policy and defines it as the protection, rehabilitation, restoration, and reconstruction of districts, sites, buildings, structures, and objects significant in American history, architecture, archeology, engineering, and culture. Significance is determined by specific criteria. The National Register of Historic Places is maintained by the National Park Service.

**Executive Order of April 29, 1994:** This executive order established that it is the policy of the United States that formal government to government relationships shall be established between agency heads and all formally recognized tribes. This policy provides the impetus for developing protocols and memoranda of understanding between the BLM and the federally recognized tribes. BLM has also applied the policy to unrecognized Indian communities.

### **STATE LAWS (California and Nevada)**

**Porter-Cologne Water Quality Control Act:** This act establishes a comprehensive water quality program for the state of California, through the State Water Resources Control Board, including a non-point source program on rangelands. This act also gives authority to nine semi-autonomous Regional Water Quality Control Boards within the state.

**California Food and Agriculture Code, Section 403 and Title 3, California Code of Regulations, Section 4500:** These codes provide the responsibilities and priorities governing the California Department of Food and Agriculture to protect the agricultural industry of the state by controlling weeds on all lands, including federally owned rangelands.

**California Endangered Species Act:** This act is administered by the California Department of Fish and Game and is patterned after the federal Endangered Species Act, by providing a state listing and protection responsibilities for species determined to be specifically protected within California.

**California Native Plant Protection Act:** This 1977 act provided for the California Department of Fish and Game to "preserve, protect, and enhance endangered plants in California".



## **EXISTING MANAGEMENT SITUATION**

### **Air**

There are a number of basic federal statutes, executive orders and state laws that direct BLM's response to air quality issues. Generally, compliance with the various laws and policy has been achieved through the NEPA process. Through the NEPA process proposed projects are evaluated as to their potential emissions and the compliance with law, and appropriate mitigation measures are identified.

### **ACECs**

FLPMA established the authority to designate Areas of Critical Environmental Concern (ACEC) (Section 103 (a)). The Act defined an ACEC as an area within the public lands where special management attention is required. The CDCA Plan and publication in the Federal Register established 72 ACECs. Since that time several additional ACECs have been established and a few have been deleted. Within the NEMO Planning Area there are 11 ACECs remaining on BLM lands. The ACECs were designated due to historic, prehistoric, wildlife, scenic and plant values. Each ACEC has a management plan, which spells out management prescriptions necessary to meet the objectives for the area. These prescriptions include details like signing, patrol needs, monitoring, construction of facilities and possible restrictions on uses. Specific details on the ACECs can be found the individual ACEC plans.

### **Wildlife**

A number of public laws, acts and executive orders provide direction to the BLM in managing wildlife resources. Some of these are the National Environmental Policy Act of 1969; Endangered Species Act of 1973 (as amended); Sikes Act; Executive Order No. 11514, Protection and Enhancement of Environmental Quality; Executive Orders 11644 and 11989, Off-Road Vehicles on Public Lands; Executive Order 11990, Protection of Wetlands; Executive Order 11988, Floodplain Management; and the Federal Land Policy And Management Act of 1976. The BLM has translated applicable parts of these laws, acts, and executive orders into policies and guidance, which are contained within the BLM manual system. BLM Manual 6840 provides direction to the wildlife program for Threatened and Endangered Wildlife, and Manual 6740 provides direction for Wetland-Riparian Area Protection and Management.

The CDCA Plan identifies wildlife management goals. Several management tools are available to meet the objectives of the Wildlife Element of the CDCA Plan. The principal one is activity plans such as ACEC plans and habitat management plans (HMPs) which were identified in the CDCA Plan. An approved plan of operation is required for any mining operation (with the exception of casual use) prior to commencing work in an ACEC (43 CFR Ch II Subpart 3809-Surface Management), regardless of the size of the operation. Mining plans of operation trigger the NEPA review and compliance process. Some fish



and wildlife resources requiring special management attention can be protected in Multiple-Use Class L through the designation of routes. A fourth tool used in the CDCA Plan is designation of Special Areas (SA). This allows highlighting habitats and species known to be important for special consideration of projects in the environmental assessment process. Desert tortoise: For a detailed discussion of the desert tortoise current management situation in NEMO, see Foreman (1998)

**Bats:** Bat management concerns in BLM management activities center primarily around mineral and energy production issues and the management of recreation use of cave resources. Bureau policy specific to bats is based on a Master Memorandum of Understanding between the BLM and Bat Conservation International. Signed on March 20, 1993, the MOU states the joint desire of BLM and BCI to "...cooperate fully with each other in matters relating to the inventory and monitoring of key bat habitats, education, research and management improvement of bat habitats through development and maintenance activities on BLM lands." The Master MOU has resulted in specific Washington Office guidance to field offices regarding "Use of Caves Important to Bats" and "Closure of Abandoned Mines and Preservation of Bat Habitat." Instruction Memorandum No.1 93-291 states that "...State Directors should ensure that sufficient expertise is developed in each State to evaluate effects of BLM management policies and activities on bats."

In general, BLM policy requires an inventory of mines proposed for renewed mining prior to initiating mining activity. The policy also requires minimization of impacts to bat roosts and foraging habitat; and where impacts to bats are determined likely as the result of an authorized mining action, humane treatment and elimination of bat occupancy/entry into the subject mine. In areas where no active mining occurs, bats are occasionally documented in specific mine shafts and/or adits, but these bat family groups or colonies are often at risk due to human visitation disturbance and vandalism impacts. Many bat species will abandon maternity, hibernation, and/or day roosts with a single inappropriate human visitation.

Very little formalized bat inventory has occurred on public lands within the planning area. Bat use of a specific mine is occasionally documented during field visits to complete NEPA analysis on mining actions, but there is seldom adequate time to conduct appropriate surveys and/or develop meaningful mitigation unless the proposed mining action is located in a MUC L designated area. The existing MUC M designation allows locatable mining actions to be conducted under a Notice of Proposed Action. Under Code of Federal Regulations (CFR) 3809 mining notice provisions, BLM has 15 days to review the proposed mining activity and take any actions necessary to stop or modify the proposed action. When there are known special status wildlife species in an area, site surveys are necessary to evaluate the proposed action. Due to mandated time constraints, it is seldom possible to schedule and conduct the necessary inventories, recommend meaningful mitigation, and prepare supporting report documentation in the time allowed. Additionally, many special status species, like bats, have a limited time of year when adequate inventories can be conducted. When bats are documented to occur in a specific mine or



group of mines through NEPA analysis of mining actions, mitigation that is designed to secure replacement bat habitat for the habitat to be lost to mining, seldom occurs.

**Desert Bighorn Sheep:** Management plans for this species in southwestern deserts commonly have defined mountain sheep populations on the basis of their geographic location, usually a single mountain range (Bureau of Land Management 1986). Movement corridors and the ranges/areas in which bighorn sheep occur have been defined in the CDCA Plan.

The BLM developed the "Rangewide Plan for Managing Habitat of the Desert Bighorn Sheep on Public Lands" (1986) in which the goal was to "facilitate recovery of desert bighorn sheep in the Southwest through a balanced program of inventory, on-the-ground projects, monitoring, and research." Also the "Mountain Sheep Ecosystem Management Strategy in the 11 Western States and Alaska" (1995) was developed with the goal of "providing habitat of sufficient quantity and quality to sustain optimum populations and a natural abundance of wildlife on public lands..." CDFG in cooperation with BLM is preparing "metapopulation" plans for various regions of the desert. These will set population and habitat goals and prescribe management actions.

## Vegetation

Vegetation, especially in the riparian areas, is affected by visitor use and authorized activities, such as mining, livestock grazing, wild horses and burros and wildlife development. These activities will continue to affect vegetation, as will wildfire. Recreation use is mostly controlled through route designations, which limit OHV access to critical sites. Except for mining notices, all proposed activities receive a NEPA review that includes field checks for special status plants and UPAs. The NEPA review includes the development of expected impacts and recommended mitigation. Minerals actions conducted on MUC class M or Class I lands under a Notice of Proposed Action receive minimal review under NEPA and do not need authorization. The minerals operator may proceed after 15 days from the filing of the notice. This does not allow adequate time to mitigate general impacts to vegetation.

The CDCA Plan identified a number of unusual plant assemblages (UPAs) and established goals to preserve their habitat and ensure the continued existence of the plant assemblage. These UPAs include areas which are unique in the desert because of size, unusual age, areas associated with water (like riparian forests, mesquite bosques and marshes) and other unique vegetation areas. The CDCA Plan states that all UPAs will be taken into account when conducting site specific NEPA analyses. The CDCA Plan also identified the need to conduct inventory to identify additional UPAs.

**Special Status Plants:** It is BLM's policy to carry out management, consistent with the principles of multiple use, for the conservation of Special Status Plant Species and their habitats and will ensure that actions authorized, funded, or carried out do not contribute to the need to federally list any of the species as threatened or endangered. Potential projects, which could impact special status plant species, will normally be reviewed through the



NEPA process. If potential impacts are found the impact is avoided by modifying the project to avoid special status plants and their habitats. For MUC class M lands for small (under five acres) mining projects that can be filed under a notice, the fifteen-day review period may be insufficient to conduct record searches and field inventories and recommend mitigation measures.

**Noxious Weeds:** The BLM has been actively eradicating noxious weeds for a number of years. In the CDCA, much of the effort has been aimed at the eradication of salt cedar, which invades and damages riparian areas. The interest in weed management has been increasing in recent years. In February, President Clinton signed an executive order to address noxious weeds. In addition the BLM has issued several policy statements relating to noxious weeds. Most relate to detection and reducing mechanisms that spread weeds. These include: 1) the use of native seed that is certified weed free, 2) the use of weed-free mulch, 3) the requiring of weed-free hay on BLM lands (as it becomes available) and 4) the need to inventory for and report locations and acres of noxious weeds.

## Water

A large number of water sources exist within the NEMO planning area. Known surface water sources in the northwestern portion of the NEMO planning area include numerous streams, springs, seeps, and a lake. Most of the mountain ranges in the northwestern area reach over 10,000 feet elevation and have numerous steep canyons that support streams. These include the Middle Park, Pleasant, Happy, Surprise, Hall, Jail and Tubor Canyons in the Panamint mountains, Thompson Canyon in the Argus Range, Craig, Hunter, Beverage, Keynot, Mc Elvoy, Pat Keys and Willow Creek Canyons in the Inyo Mountains and Weyman, Cottonwood, Toler, McAfee and Perry Akin Canyons in the White Mountains. Weyman, Cottonwood, McAfee and Perry Akin creeks all support trout fisheries and are diverted near their mouth for irrigation. Cottonwood Creek alone supplies most of the water for 1,600 acres of alfalfa (nearly 10,000 acre feet from April to November). Several large springs occur on private land in Deep Springs Valley. One, Corral Spring, has a very large flow and is one of the major sources of water for Deep Springs Lake, which covers nearly 2,000 acres, and an associated wetland. Numerous additional springs and seeps are scattered throughout the northwest portion of the planning area. Other significant water sources include the Amargosa River, Willow Creek, Grimshaw Lake, Salt Creek and Tecopa Hot Springs.

Groundwater is found underneath most of the NEMO planning area and varies greatly in depth and quality. The many groundwater basins within the NEMO planning area are recharged from surface and subsurface infiltration. Depletion of groundwater basins and diminishment of water quality are some of the concerns with this resource. Groundwater is the principle source within the NEMO planning area for desert springs, seeps, and streams. Maintenance of the groundwater's quality and quantity is critical to the survival of desert surface waters and their associated plant and animal life.



## Cultural Resources

Processes for managing and evaluating cultural resources are defined in several pieces of legislation, most notably the National Historic Preservation Act (NHPA) of 1966 (as amended). The NHPA established requirements for considering the effects of agency actions on cultural resources, proactive management of cultural resources because of their importance to the nation, and consultation with other agencies or interested parties regarding their management. The BLM has a programmatic agreement with the State Historic Preservation Officer regarding implementation of the NHPA. Significant resources are nominated to the National Register of Historic Places (NRHP) as funding and other resources permit. Determinations as to whether cultural resources are eligible for listing on the National Register are usually made on a site-by-site, ad hoc basis. Inventory and recordation primarily occur when required because of a proposed action. Additional guidelines for management of cultural resources are included in the CDCA Plan, including MUC guidelines. Certain mining activities, which can affect cultural resources, may occur 15 days after a Notice of Intent is filed, subject to resource protection measures identified within that time frame. Site-specific management for significant cultural resources is provided in ACEC management plans, where applicable.

Cultural resources at all of the very high and high sensitivity cultural sites in MUC “I” and “M” are subject to potential effect from mining actions under CFR 3809 following a 15-day period after filing of a Notice of Intent. Within this 15-day time frame the following activities may need to occur: inventory, evaluation, and identification of avoidance and/or recovery strategies for these sensitive resources. Consultations with Native Americans and with the State Office of Historic Preservation must also occur within the 15-day time period. When significant resources are identified within the 15-day period, consultation and avoidance strategies or other mitigation are identified and additional delays could occur until these evaluations are completed. However there is a high risk from inadvertent damage or destruction of such resources if they can not be identified within the 15-day time frame. Because of the low level of existing inventory data it is not possible to fully measure the potential loss of cultural, traditional, and public values in these areas from proposed actions unless these predisturbance surveys can be performed. This impact is generally irreversible and irretrievable.

Mining activity may also attract or facilitate other activities into an area if the mining activity results in improved access. Other activity attracted into the area or facilitated by it may increase the level of impacts to cultural resources in the area. The known sensitive cultural resources that need to be evaluated include historic mining complexes that may be or are known to be historically valuable and/or are popular sites for public visitation and offer excellent interpretive/heritage tourism opportunities. They also include prehistoric sites of a unique, unusual, or scientifically significant nature, or that hold sacred or cultural value to Native Americans such as rock alignments, sites at which stone was quarried for tool manufacture, or habitation sites with subsurface deposits. The CDCA Plan called for these high sensitivity areas to be adequately inventoried. Due to resource limitations less than 10% of the areas has been inventoried to date.



## Minerals

**Mineral Resource Management:** Federal regulations recognize three methods for disposing minerals from the public lands. Saleable minerals are those mineral materials that are disposed via a sales contract (common stone, gravel, fill dirt, etc.). Such materials are also permitted to public agencies via a Free Use Permit. Leasable minerals are those minerals for which the government receives a fixed percentage of their sales price (a royalty) under the terms of a lease. Leasable minerals include oil & gas, geothermal production, coal, sodium and potassium minerals. Locatable minerals are those minerals for which one can locate a mining claim under the General Mining Law of 1872, including gold, silver, talc, etc.. In general, public lands are open to mineral exploration and development except where specifically closed or withdrawn from the public land laws.

**Mineral Material Disposals (Sales & Permits):** A BLM Field Manager may dispose of mineral materials upon receipt of a written request or upon his/her own initiative. These disposals include Sale Contracts, Free Use Permits (to public agencies or non-profit organizations) and Community Pits (for sales to the general public). A written request includes a mining plan that describes how the material will be removed and how the site will be reclaimed.

The Field Office staff then prepares an environmental document as required by the National Environmental Protection Act (NEPA); this generally means a Categorical Exclusion, Environmental Assessment or Environmental Impact Statement, as appropriate. At a minimum, these environmental documents generally include consideration of and mitigation measures for cultural resources and threatened and endangered species. If/when the request is approved, the contract or permit is written to include appropriate mitigation measures and reclamation standards. Performance bonds are required for sale contracts of \$2000 or greater.

No mineral material disposals are issued in Wilderness or Wilderness Study Areas. Mineral materials may be disposed of in lands classified as "I", "M" or "L" in the California Desert Conservation Area Plan. An Environmental Assessment, rather than a Categorical Exclusion, is prepared for new cases affecting 5+ acres of Class L land (MUC Guidelines, CDCA Plan).

**Mineral Leases:** Mineral leases are generally issued by the California State Office rather than by a Field Manager. However, the lessee must submit an appropriate "Notice" or Application to the Field Manager prior to conducting operations on the lease. The Field Office staff then analyzes the proposed action and prepares an environmental document as required by NEPA (a Categorical Exclusion, Environmental Assessment or Environmental Impact Statement, as appropriate). At a minimum, such analysis includes consideration of threatened and endangered species and cultural resources. Other issues (e.g., underground aquifers, road standards, etc.) are also considered as appropriate. The field manager includes reclamation measures and mitigation measures in any authorization of the proposed action.



No mineral leases are issued in Wilderness or Wilderness Study Areas. However, if an area containing a valid lease is absorbed by the National Wilderness Preservation System, the leaseholder is accorded the rights granted under the terms of that lease. No such leases are included in any Wilderness or Wilderness Study Area in the NEMO planning area. Mineral leases can be issued in lands classified as L, M or I by the California Desert Conservation Area Plan. An environmental document, as per NEPA guidelines, is prepared when the Field Manager receives an Application/Notice for lease-related operations in Class L, M or I lands; a 60-day public comment period is provided for lease-related Environmental Assessments in Class L lands (MUC Guidelines, CDCA Plan).

**Locatable Minerals (Mining Claims):** The Location Notice for any mining claim must be filed and registered both with the county recorder of the appropriate county and the BLM State Office in Sacramento, California. In general, a valid mining claim is one which is properly located, registered, and contains a discovery of a valuable mineral deposit. A valuable mineral deposit is one that is shown to be economically valuable or can be worked as a paying mine (Maley, 1985). An operator has the responsibility to prevent unnecessary and undue degradation of Federal lands resulting from operations authorized by the mining laws. The regulations for avoiding unnecessary or undue degradation to the public lands are contained in 43 CFR 3809.

The Code of Federal Regulations recognizes three levels of Mining Law-related operations on public lands. Casual use operations are those activities that ordinarily result in only negligible disturbance of public lands and resources (gold panning, metal detecting, etc.). No approval or notification is needed for casual use activities on public lands. Activities are not considered casual use if they involve using explosives, mechanized earth-moving equipment, or motorized vehicles in an area designated as closed to off-road vehicles.

In the California Desert District, an operator must file a "Notice" prior to initiating operations that disturb 5 acres or less in Class M and I lands. Among other things, the Notice must describe the project, the reclamation measures and must be received by the Field Manager at least 15 days prior to commencing operations. Approval of a Notice by the Field Manager is not required, and properly filed Notices constitute authorization for off-road vehicle use. Notice-type operations are required to comply with all pertinent state and federal laws, including the California Surface Mining And Reclamation Act (SMARA), threatened and endangered species protection, and cultural resource protection. Existing programmatic agreements are in place for many small mining actions.

The BLM does not accept Notices for non-casual use activities in Class L land, Areas of Critical Environmental Concern, Wilderness and Wilderness Study Areas. An operator must file a Plan of Operations for any operation in these areas or which exceeds 5 acres of Class "M" or "I" lands. Among other things, a Plan of Operations must describe when, where, how and what type of operation is to be conducted and what measures will be taken to reclaim disturbed areas. The Field Office staff is required to promptly prepare an Environmental Assessment for any Plan of Operations.



Any such Environmental Assessment must include consideration for any cultural elements that may be affected, including as appropriate cultural resources and threatened and endangered species. The Field Manager cannot approve a Plan of Operations if the BLM has need to comply with section 106 of the National Historic Preservation Act or Section 7 of the Endangered Species Act. An operator must also post a financial guarantee sufficient to cover 100% of the cost of reclamation, prior to conducting operations under a Plan of Operations. This financial guarantee must either be certified by a California-registered engineer, or accepted by a state agency but in no case, can the guarantee be less than \$2000/acre.

**Wilderness Study Areas:** Federal Regulations allow mining claim location, prospecting, and mining operations in Wilderness Study Areas (43 CFR 3802), but only in a manner that will not impair the suitability of the area for inclusion in the wilderness system. An approved Plan of Operations is required for operations within lands under wilderness review. The Field Manager acknowledges and reviews a Plan of Operations to determine if the proposed operations impair the suitability of the project area for preservation as wilderness. He/she may approve the Plan subject to mitigating measures that prevent impairment of the suitability of the area for wilderness, or notifies the operator why the Plan is not acceptable. No Plans of Operation are on file for any of the Wilderness Study Areas in the NEMO Planning Area.

**Wilderness:** New mining claims cannot be located in a designated wilderness area. However, a designated wilderness occasionally includes mining claims that were located prior to the date the area was included in the National Wilderness Preservation System. Federal regulations (43 CFR 8560.4-6) state that no mining operations shall be conducted on BLM-administered wilderness areas without an approved Plan of Operations as per 43 CFR 3809.

As stated above, current regulations require a Plan of Operations to include a reclamation bond as required by state and federal statutes; the bond amount must cover the cost of reclaiming the land in such a way as to prevent the impairment of their wilderness character (43 CFR 8560.4-6(h)). A Field Manager cannot approve this Plan of Operations unless or until a BLM mineral examiner completes a Validity Examination of the unpatented mining claim. As stated above, an unpatented mining claim is valid if that claim contains a discovery mineral deposit that might reasonably be developed into a paying mine; the claim is invalid if it does not contain such a discovery.

### **Motor Vehicle Access Management**

The BLM manages motor vehicle access in the California desert consistent with FLPMA, Executive Order (EO) 11644, EO11989, Title 43 of the Code of Federal Regulations (CFR) 8340 et seq., and the CDCA Plan, as amended in 1982 and 1985. The increased popularity and widespread use of off-highway vehicles on federal lands in the 1960's and early 1970's prompted the development of a unified policy for such use. Executive Order 11644 ("Use of Off-Road Vehicles on the Public Lands") was issued on February 9, 1972 (87 FR 2877),



to establish these policies. It provided for procedures to control and direct the use of OHV's on federal lands so as to

- (1) protect the resources of those lands;
- (2) promote the safety of all users of those lands; and
- (3) minimize conflicts among the various uses of those lands.

The order directs the agency heads responsible for managing the federal lands to issue regulations governing the designation of areas where OHV's may and may not be used. Under the order, OHV use can be restricted or prohibited to minimize:

- (1) damage to the soil, watersheds, vegetation, or other resources of the federal lands;
- (2) harm to wildlife or wildlife habitats; and
- (3) conflicts between the use of OHVs and other types of recreation.

It also requires the federal agencies to issue OHV use regulations, inform the public of the lands' designation for OHV use through signs and maps, enforce OHV use regulations, and monitor the effects of OHV use on the land.

Executive Order 11989 ("Off-Road Vehicles on Public Lands") was issued on May 24, 1977 (42 FR 26959), and contains three amendments to the previous order. While these amendments lift restrictions on the use of military and emergency vehicles on public lands during emergencies, they otherwise strengthen protection of the lands by authorizing agency heads to:

- (1) close areas or trails to OHVs causing considerable adverse effects; and
- (2) designate lands as closed to OHVs unless the lands or trails are specifically designated as open to them.

The BLM developed regulations (43 CFR 8340) in response to the executive orders. These regulations require the agency to designate areas where OHVs may be used and to manage the use of OHVs on public lands through the resource management planning process, which allows for public participation. The regulations also require the BLM to monitor the use of OHVs, identify any adverse effects of their use, and take appropriate steps to counteract such effects.

In 1980, the BLM addressed designation of areas where OHVs may be used and management of their use for the California desert in the CDCA Plan, Motor Vehicle Access Element. In the CDCA Plan, different levels of access were provided for both areas and specific routes in the desert. Areas could be "open", "closed", or "limited". Generally "open" areas are open to vehicle use throughout the area and "closed" areas are closed to vehicle use throughout the area. There are exceptions for both of these areas and these are further defined in the CDCA Plan and in other referenced legislation and regulation.

Within "limited" areas, specific route designations are to be made, and at a minimum, use will be restricted to existing routes of travel. Routes are to be designated "open", "closed", or "limited", and the guidelines are established based on Multiple-use class. Within MUC I, unless it is determined that further limitations are necessary, those areas not "open" will



be limited to use of existing routes. Within MUC M, access will be on existing routes, unless it is determined that use on specific routes must be limited further. Within MUC L, due to higher levels of resource sensitivity, vehicle access will be directed toward use of approved routes of travel. Approved routes will include primary access routes intended for regular use and for linking desert attractions for the general public as well as secondary access routes intended to meet specific user needs. Routes not approved for vehicle access will be reviewed and, after opportunity for public comment, those routes deemed to conflict with management objectives or to cause unacceptable resource damage will be given priority for closure through obliteration, barricading, or signing. (CDCA Plan, Amendment #3, 1982).

## **Livestock Grazing**

Livestock grazing is primarily authorized under the Taylor Grazing Act as amended (43 U.S.C. 315, 315a through 315r). Additional authorities include the Federal Land Policy and Management Act of 1976, the Public Rangeland Improvement Act, several executive orders and public land orders. In addition, numerous land laws including the National Environmental Policy Act and the Endangered Species Act apply to the administration of grazing on the public lands. Grazing regulations are found in 43 CFR part 4100. The process to allocate grazing use involves a number of steps including the classification of an area as suitable for grazing, an adjudication process to determine who is eligible to graze, the determination of allocations, numbers of livestock, class of livestock (sheep, cattle and/or horses) and seasons of use. For the most part grazing use predates the Taylor Grazing Act (1934) and grazing use has been authorized under those provisions since the mid 1930s. The CDCA Plan readdressed all of these issues except for the adjudication of eligibility. In addition, it addressed additional prescriptions for grazing including monitoring needs, needs for allotment management plans (AMPs) and mitigation for resource conflicts such as sensitive wildlife species.

If an operator chooses to make less use than his full allocation he may apply for non-use (such as for droughts or other environmental reasons). If the non-use is for personal reasons (such as personal economic reasons) BLM may temporarily authorize another qualified applicant to graze the amount of authorized non-use. If an authorized operator chooses to give up his grazing authorization any qualified person may apply for the unused allocation.

All of the CDCA Plan prescriptions (including AUM allocations, seasons of use, area of use, restrictions due to resource conflicts and the need for AMPs) were issued to all of the operators as decisions in the early 1980s and have been incorporated into the grazing leases/permits. Many of the high priority allotments now have AMPs which include monitoring plans, grazing management systems and proposed range improvements to implement the AMPs. Rangeland Reform resulted in the development of a new set of Fundamentals of Rangeland Health and National Standards and Guidelines for Grazing Administration (43 CFR 4180.1-2). Currently all of the allotments are being assessed as to compliance with the Standards. Allotments that do not meet Standards due to livestock



grazing will have specific actions developed to remedy the situation that could include negative decisions being issued to the operator.

### **Wild Horse & Burro**

Wild horses and burros are protected by the federal Wild Free-Roaming Horse and Burro Act of December 15, 1971 (16 U.S.C. 1331-1340), as amended. Implementation regulations are found in 43 CFR Part 4700. Under the act, Congress declared that wild horses and burros are protected and are an integral part of the public land resources. BLM is required to achieve and maintain population levels, which ensure an ecological balance. The areas where horses and burros were known to exist at the time of the passage of the Wild Free-Roaming Horse and Burro Act are known as Herd Areas (HAs) and provide the upper limit of potential management areas for these animals. The CDCA Plan called these areas Herd Management Areas (HMAs). It also identified concentration areas where wild horses and burros tend to concentrate based on several factors, including water, vegetation and terrain. These areas were evaluated by the CDCA Plan for available AUMs. It also recommended management number of wild horses and burros within these units. The CDCA Plan used this information to identify retention areas, where these animals are to be managed, and prescribed population levels.

BLM currently manages wild horses and burros under existing CDCA Plan and HMA Plans, where developed. Appropriate management levels (AMLs), a single number which is the upper level of an established population range, were set in the plans based on available forage and water, and other resource needs or conflicts. Since the late 1970s, many animals have been removed and placed into the BLM's National Wild Horse and Burro Adoption Program. As a result, populations have been decreased substantially since the censuses taken in the early 1970's and at the time of CDCA Plan. Several HMAs still have an excess of animals, while others no longer have herds due to changes of population dynamics of the herds.

There are no fences between BLM administered lands, most private lands, and NPS lands (Mojave National Preserve and Death Valley National Park), so there is some migration between these lands. In order to minimize migration, activities may include, but are not limited to, continuing to reduce herds where established populations exceed appropriate levels and placing them into the BLM's adoption program, moving herd management areas, erecting fencing, and/or providing additional improvements such as water sources on public lands. BLM coordinates removal of unwanted wild horses and burros from NPS land on a case-by-case basis, as requested.



<b>WILD HORSE AND BURRO DISTRIBUTION POPULATIONS</b>					
<b>Herd Area - Herd Management Area</b>	<b>HMA Target Population Levels</b>		<b>Existing Population Census</b>		<b>Acreage</b>
	<b>Horses</b>	<b>Burros</b>	<b>Horses</b>	<b>Burros</b>	
<b>Waucoba - Hunter Mountain HMA</b>	0	357	0	137	93,833
<b>Lee Flat HMA</b>	0	30	0	15	88,523
<b>Panamint HA</b>	0	0	0	106	214,450
<b>Centennial HMA</b>	168	0	311	150	1,023,384
<b>Slate Range HA</b>	0	0	0	86	492,020
<b>Sand Springs/Last Chance HA</b>	0	0	0	15	43,569
<b>Piper Mountain HMA</b>	17	82	63	0	97,435
<b>Chicago Valley HMA</b>	28	28	4	4	314,377
<b>Clark Mountain HMA</b>	0	44	0	305	233,407
<b>Dead Mountain HMA</b>	0	0	0	16	42,757
<b>TOTALS</b>	<b>45</b>	<b>234</b>	<b>74</b>	<b>602</b>	<b>2,643,755</b>

## SUMMARY

This appendix has documented current policies affecting the primary resources and uses in the NEMO Planning Area. Additional information on the existing situation including resources that are specifically affected by alternatives proposed in this planning effort are discussed in Chapter 3: Affected Environment. In addition, a separate current desert tortoise management situation is available at BLM field offices with jurisdiction in the NEMO Planning Area as well as the California Desert District Office in Riverside, California.







## Appendix L

### Planning Criteria for the NEMO Planning Effort

The planning criteria for the NEMO planning effort include the following:

- Comply with applicable laws, Executive Orders, regulations;
- Define the planning area as public lands within the Northern and Eastern Mojave planning area boundary, and the study area as all lands within and immediately adjacent to the planning area;
- Consider all proposals in the context of their consistency with standards and guidelines;
- Develop and implement actions in all alternatives to accomplish the goals and overall objectives of USFWS recovery plans for listed species, to assist in the recovery and delisting of those species as feasible;
- Consider strategies for threatened and endangered species management to make it easier, more efficient, and more cost-effective for public land users to obtain activity and use;
- Conform desert tortoise category boundaries to the proposed Wildlife Management area boundaries. Category I lands are within recovery areas; Category III lands are outside of recovery areas. The USFWS will revise Recovery Unit boundaries and critical habitat designations in the planning area to be consistent with the selected desert tortoise alternative if other than no action;
- Address lands which have been released from wilderness review and are being assigned a multiple-use class as follows: (1) where they form small areas of less than 500 acres they will be addressed by plan maintenance to be consistent with adjacent lands. (2) those over 500 acres will be addressed by plan amendment on a case-by-case basis;
- Rely on available inventories and existing resource data in the planning area, as well as ongoing data being collected as part of the range assessment process when available, to reach sound management decisions.
- Designate routes at a minimum in desert tortoise critical habitat and also in the proposed desert tortoise Wildlife Management area (i.e., proposed Category I desert tortoise habitat).







# APPENDIX M: CALIFORNIA DESERT CONSERVATION AREA PLAN MAINTENANCE ACTIONS RESULTING FROM THE CALIFORNIA DESERT PROTECTION ACT

SUMMARY OF CHANGES RESULTING FROM CDPA OF 1994			
CHANGE	LOCATION	REASON	ASSOCIATED NEMO AMENDMENTS
Dinosaur Trackway ACEC Expansion	Mountain Pass Area	Boundaries modified by Congress	Plan Clarification only. Language in the CDCA Plan will be corrected to reflect currently accurate acreage and closure to mineral entry per CDPA. State lands may be acquired. No other management direction change identified.
Designation of BLM wilderness	19 Wilderness Areas partially or entirely in the planning area	Boundaries set by Congress.	Plan Clarification only. Language in the CDCA Plan will be updated to reflect class C lands as designated wilderness areas rather than BLM-recommended wilderness and will be closed to motor vehicle use in accordance with the CDCA Plan, as amended and 8342.1(d), consistent with the California Desert Protection Act.
Modification of guidance for remaining designated wilderness study areas and lands not released from wilderness review	1 Wilderness Study Area 5 Areas Not Released	Congress withdrew most areas from the land laws	Plan Clarification only. Language in the CDCA Plan will be corrected to reflect appropriate guidance for WSA and remaining areas not released from wilderness review.
Determine Multiple Use Class for Congressionally released wilderness study areas	41 Released Areas totaling 468,300 acres	Areas released by Congress.	Yes. Lands interim MUC L (limited) at this time. CDCA Plan calls for plan amendment to determine permanent MUC.
Elimination of Areas of Critical Environmental Concern	Soda Lake ACEC Fort Piute/Piute Creek ACEC 4,175 New York Mountains ACEC 54,750 Eureka Dunes ACEC Dedeckera ACEC Darwin Falls ACEC Panamint Dunes ACEC Granite Mountains Research Natural Area ACEC Cima Dome National Natural Landmark ACEC Kelso Dunes National Natural Landmark ACEC Little Sand Spring ACEC Cinder Cones National Natural Landmark ACEC	Lands no longer under BLM jurisdiction- Transferred to NPS.	Plan Clarification only.
Modification of Areas of Critical Environmental Concern	Greenwater Canyon ACEC Clark Mountains ACEC Cerro Gordo ACEC Saline Valley ACEC Surprise Canyon ACEC	Transferred to NPS.	Yes. Remaining public lands in ACECs substantially reduced in size were evaluated for deletion modification, or retention.
Elimination of Special Areas	East Mojave National Scenic Area	Transferred to NPS.	Plan Clarification only.



# Appendix M: CDCA Plan Maintenance Actions

CHANGE	LOCATION	REASON	ASSOCIATED NEMO AMENDMENTS
Modification of Special Areas	Last Chance Canyon National Historic Site	Transferred to NPS.	Plan Clarification only.
Elimination of Herd Management Areas for management of wild horses and burros	Lave Beds HMA Cima Dome HMA Granite/Providence HMA Woods-Hackberry HMA	Transferred to NPS.	Plan Clarification only.
Modification of Herd Management Areas for management of wild horses and burros	Waucoba-Hunter Mountain HMA Lee Flat HMA Panamint HMA Centennial HMA Slate Range HMA Sand Springs/Last Chance HMA Piper Mountain HMA Chicago Valley HMA Clark Mountain HMA 41,260 Dead Mountains HMA	Transferred to NPS.	Yes. HMAs substantially reduced in size in desert tortoise habitat and/or adjacent to NPS lands were evaluated for deletion, change in area, and/or additional management strategies.
Elimination of grazing allotments	Colton Hills Allotment Gold Valley Allotment Round Valley Allotment	Transferred to NPS.	Plan Clarification only. Leases and case files have been transferred to NPS for administration.
Modification of grazing allotments	Last Chance Allotment Hunter Mountain Allotment Lacey-Cactus-McCloud Allotment Eureka Valley Allotment Valley View Allotment Valley Wells Allotment Clark Mountain Allotment Kessler Springs Allotment Piute Valley Allotment Crescent Peak Allotment	Transferred to NPS.	Yes. Rangelands substantially reduced in size in desert tortoise habitat and/or adjacent to NPS lands with grazing were evaluated for retirement, change in area, and/or additional management strategies.
Elimination of NEMO portion of Barstow to Vegas race course	From Alvord Road northeast of Barstow heading northeast, weaving back and forth across and roughly parallel to I-15, to just over the state line in NV.	A portion of corridor transferred to NPS, a portion of corridor critical desert tortoise habitat	Yes. Any changes would also affect lands in the West Mojave planning area, so proposed amendment would not be finally decided until consideration in the WEMO planning process as well. Dualsport events currently considered on designated open routes on public lands. Corridor discussed in terms of recommendations for its future in Chapter 2.
Modification of the I-15 and I-40 utility corridors	Along I-15 and I-40 where the Mojave National Preserve is adjacent to (within 2 miles) of the freeways - approximately 45 miles.	Transferred to NPS.	Plan Clarification only. Corridors were essentially narrowed by half, to 2 miles wide. It is unclear at this time whether additional corridor width will be needed to serve future demand.



## **Appendix N**

# **LAND TENURE STRATEGY FOR THE NEMO PLANNING AREA**

## **1.0 LAND TENURE STRATEGY**

How can areas of checkerboard land ownership that create habitat fragmentation be addressed? How can BLM acquire critical lands in Inyo County and address county concerns about their limited tax base? A strategy is proposed to answer these and other issues raised during the planning effort. Significant changes in land ownership patterns and management have occurred and are continuing in the planning area. A strategy of the future of public lands in the planning area is needed to complement other NEMO strategies and to identify issues and areas of concern.

## **2.0 LAND TENURE**

This section describes the overall land tenure strategy in the NEMO Planning Area consisting of priorities and identification of areas for land acquisition and disposal.

These land acquisition and disposal actions are discussed in Chapter 4 in the context of cumulative impacts affecting the NEMO Plan area. All future implementing actions (exchanges, sales, purchases, donation) will be subject to site specific environmental analysis and public review.

## **2.1 MAJOR LAND TENURE ACTIONS AFFECTING THE PLANNING AREA**

### **2.1.1 Acquisition of State of California Lands in Designated Wilderness**

Land exchanges are underway to implement the provisions of the California Desert Protection Act. The CDPA requires the Secretary of the Interior to enter into an agreement with the State Lands Commission (SLC) to acquire their holdings within wilderness areas. Approximately 58,000 acres of SLC lands are involved in 16 of the 21 wilderness areas in the NEMO Planning Area.

### **2.1.2 Wildlands-Catellus Agreement**

A January 1999 Letter of Intent between The Wildlands Conservancy, Catellus Development Corporation, and BLM California identified approximately 437,000 acres of Catellus properties throughout the CDCA to be purchased by a combination of Wildlands Conservancy funds and appropriations from the Land and Water Conservation Fund (LWCF). Congress approved fifty percent of the needed LWCF appropriations in FY 2000. The purchased land would be conveyed to the BLM and National Park Service. The lands proposed for conveyance are located within wilderness, desert tortoise critical habitat units, and recreation areas. BLM has since accepted title to approximately 103,000 acres of former Catellus lands within the NEMO



Planning Area, substantially completing the Wildlands Conservancy-Catellus exchanges in the Planning Area. These recently acquired lands are concentrated in the southern portion of the NEMO Planning Area and resulted in a significant consolidation of public lands administered by BLM, particularly in the Piute-Fenner Desert Wildlife Management Area.

### **2.1.3 Timbisha-Shoshone Land Transfer Study**

The CDPA requires the Secretary of the Interior to conduct a study to identify lands suitable for a reservation for the Timbisha-Shoshone Tribe. One of the areas under consideration in the NEMO Planning Area consists of approximately 1,000 acres of public lands near the community of Death Valley Junction in Inyo County. The NEMO plan does not address a land tenure proposal or alternatives related to a potential transfer of public lands to the Timbisha-Shoshone Tribe. Transfer of lands to the Tribe would be by Congressional action and a separate legislative EIS is in preparation.

### **2.1.4 Fort Irwin Expansion**

The U.S. Army first proposed a 250,000-acre southward expansion of the National Training Center (NTC) at Fort Irwin, California in 1985. This proposal included approximately 32,000 acres in the NEMO Planning Area east of the current NTC. In 1993, the U.S. Fish and Wildlife Service issued a draft jeopardy biological opinion for the desert tortoise on the Army proposal.

The Army revised the expansion proposal to an eastern configuration including an expansion of 331,000 acres into the Silurian Valley area. This proposed expansion affected approximately 273,000 acres within the NEMO Planning Area. The January 1997 release of a Draft Environmental Impact Statement on the proposed eastern expansion generated significant opposition from a wide cross-section of desert users and constituencies. In April 1999 the Army proposed a new 175,000-acre expansion consisting of elements from both the southern and the eastern expansions. The current Army proposed expansion affects approximately 25,000 acres in the NEMO Planning Area east of the current NTC.

If an expansion of the NTC were to be approved by Congress, the affect to the NEMO Planning Area could range from a minimum of 25,000 acres, to a maximum of 273,000 acres.

## **3.0 NEMO LAND TENURE STRATEGY**

In acquisition areas, current public lands will be retained, and non-Federal lands will be acquired through exchange, purchase or donation. All acquisitions made by BLM will occur on a voluntary basis with willing property owners. The BLM will not acquire non-Federal lands through eminent domain or over the objection of property owners.

### **3.1 Desert Tortoise Conservation and Recovery**

Public ownership of lands currently ranges from 80% to 94 % in desert wildlife management areas. Under the land tenure strategy, all desert tortoise habitat within the DWMAs would be a



high priority for land acquisition in the NEMO Planning Area. Depending upon final boundaries the acreage of acquisitions could be as much as the following:

**Table N-1**

<b>Wildlife Management Area Unit</b>	<b>Private/State acres</b>	<b>Percent of Private/State Acreage</b>
Piute-Fenner Valley	34,800	20%
Ivanpah Valley	2,240	6%
Northern Ivanpah Valley	1,750	6%
Shadow Valley	6,080	6%

### **3.1.1 Amargosa Vole Conservation and Recovery**

Approximately 1,600 acres (35%) of critical habitat is private lands. About 500 acres are in the developed areas of Tecopa Hot Springs and Tecopa, which are not suitable habitat and will not be pursued for acquisition by BLM. In 1990, the BLM acquired approximately 380 acres on the current critical habitat area for the Amargosa vole.

In addition, other riparian and wetland habitat in the Amargosa River system that can support Amargosa vole and is proposed for conservation is approximately 92 percent public land. Under the land tenure strategy, all currently suitable and potentially restorable vole habitat within identified wildlife management areas would be a high priority for land acquisition in the NEMO Planning Area. Depending upon final boundaries, total acquisition areas could include the following: Central Amargosa Valley - 2,040 ac in six parcels; and North of Grimshaw Lake- 600 ac in one parcel.

### **3.1.2 Wilderness Areas**

Consistent with requirements of the CDPA, the NEMO Plan goal is the acquisition of all non-Federal lands in the 24 designated wilderness areas that are entirely or partially within the NEMO Planning Area (Chapter 7, Figure 13a). Non-Federal land within these areas will be acquired by BLM either through on-going major land tenure actions discussed in this appendix or by individual acquisition actions.

### **3.1.3 Community Expansion**

Public lands within identified disposal areas will be considered for conveyance out of Federal ownership for future private sector use and development and for necessary public purposes. Public lands within disposal areas would be conveyed by exchange or sale to support community growth and development and ensure maintenance of the private property tax base in the region.

### **Town of Baker (San Bernardino County)**

The CDCA Plan identifies approximately 1,140 acres of public lands in and around the community of Baker as unclassified and available for future disposal out of Federal ownership.



### **Mesquite Valley (Inyo County)**

The CDCA Plan identifies approximately 260 acres of public lands in Inyo County in the mesquite Valley as unclassified and available for future disposal. The public parcels are mixed with private lands in the area.

### **Community of Tecopa (Inyo County)**

All public lands in and around the community of Tecopa are MUC L (limited) and not available for disposal. The preferred alternative for Amendment 5 (Amargosa vole) would reclassify 140 acres in Tecopa from MUC L to unclassified. These lands would then be available for disposal through exchange to facilitate acquisitions in the Amargosa River ACEC.

### **Stateline/Highway 127 (Inyo County)**

All public lands in and around the Stateline area north of Death Valley Junction are currently MUC L and not available for disposal. The preferred alternative for Amendment 5 would reclassify 920 acres adjacent to private holdings from MUC L to unclassified. These lands would then be available for disposal through exchange to facilitate acquisitions in the Amargosa River ACEC.

### **Inyo County Landfills**

Under the preferred alternatives for Amendments 13 and 14, the 29.4 acres encumbered by the Tecopa landfill and the 50 acres encumbered by the Shoshone landfill would be reclassified from MUC "L" (limited) to unclassified. Both sites would be subsequently conveyed to the County of Inyo under the Recreation and Public Purposes Act.



## Appendix O

# Wild and Scenic Rivers Eligibility Report For The Amargosa River

### Introduction

This report presents the results of an eligibility study on potential additions to the National Wild and Scenic Rivers System for an identified riverine system in the Northern and Eastern Mojave Desert Management Planning Area. The one river considered potentially eligible for such designation within the planning area is the Amargosa River, originating near Beatty, Nevada and terminating in Death Valley National Park, California. This eligibility report evolved from the inventory and analysis that was conducted for consideration of alternatives to conserve and protect the Amargosa vole (refer to Chapter 2, Section 2.3) This report concludes with a discussion of management standards and guidelines applicable to rivers designated under the auspices of the National Wild and Scenic River Act.

### Background

Federal agencies such as the Bureau of Land Management (BLM) have been mandated to evaluate potential additions to the National Wild and Scenic River System (NWSRS) per Section 5(d) of the Wild and Scenic Rivers Act of 1968 (16 United States Code 1271-1287, *et seq*). Title 36 of the Code of Federal Regulations (CFR), Subpart 297, addresses management of Wild and Scenic Rivers. Title 43 CFR, Subpart 8350, specifically addresses designation of management areas. NWSRS study guidelines have also been published in Federal Register Volume 7, Number 173 (September 7, 1982), for public lands managed by the U.S. Departments of Agriculture and Interior. Additional guidance on wild and scenic rivers (WSR) is provided in BLM Manual 8351.

The NWSRS study process includes three regulatory steps:

1. Determination of what river(s) and/or river segment(s) are eligible for WSR designation;
2. Determination of eligible river(s) and/or segment(s) potential classification with respect to wild, scenic, recreational designation, or any combination thereof; and
3. Conducting a suitability study of eligible river(s) and/or segment(s) for inclusion into the NWSRS, via legislative action. An environmental impact statement (EIS) is commonly prepared to document the analysis needed for this suitability determination/WSR designation.



Any river or river segment on public lands found eligible for inclusion in the NWSRS is to be managed as if this river/segment were designated, until such time as a suitability determination is made. This requires management of public lands within 0.25 mile of the subject river/segment, to conform to management standards and guidelines presented in applicable Federal agency manuals for wild and scenic rivers until the suitability determination is completed.

If a river or river segment is found suitable for inclusion to the NWSRS, the U.S. Congress must then pass legislation so designating this river/segment, prior to its formal addition to the NWSRS. In addition to Federal agencies, private individuals and/or groups, as well as State governments, can nominate rivers and/or segments for inclusion.

Only the first two determinations, i.e., eligibility and classification, are documented in this report and the impacts evaluated in the attached NEMO Environmental Impact Statement. The remaining suitability determination would be completed in a separate document, and analyzed in an EIS format. The results of the suitability determination would amend the applicable land use plan, i.e., the California Desert Conservation Area (CDCA) Plan (BLM 1980, as amended).

To meet eligibility criteria for wild and scenic river designation, a river or segment must be free-flowing in nature and must possess one or more outstandingly remarkable cultural, fish/wildlife, geologic, historic, recreational or scenic values within its immediate proximity. Free-flowing, as defined in Section 16(b) of the WSRA, reflects water flowing in a natural condition without impoundment, diversion, straightening, or other modification of the waterway. However, the existence of low dams, diversion works, and other minor structures at the time of designation, does not necessarily bar consideration for inclusion on the NWSRS. Nor are there any minimum river or segment lengths necessary for inclusion. Congress has designated a riverine stretch as short as 4.25 miles. But considerations in defining study rivers and/or study river segments, should include land ownership patterns, physical changes in the river/segments and their environs, as well as the type and amount of human modification of lands bordering identified rivers/segments.

The term "outstandingly remarkable" is not clearly defined in the NWSRS, necessitating professional judgement by submitting parties. In general, the term is defined as a resource which is considered more than simply ordinary, in the context of the local region. Examples include areas supporting an "A" Scenic Quality Rating (BLM Manual 8400); habitats for threatened and/or endangered plants/animals; exemplary physiographical, ecological, geological or recreational type locations; and areas where little human modification is evident or where terrain is rugged and physically-challenging to traverse.

## **Description of River Under Consideration**

The Amargosa River is the focal hydrologic system of the Northern and Eastern Mojave Desert (NEMO) Planning Area. The hydrologic systems of the southern Great Basin and



northern Mojave Desert are generally characterized by deep water tables. They are also considered primarily closed groundwater basins. One of only two large rivers in the Mojave Desert, the free-flowing Amargosa is largely subterranean. It begins its southerly, largely underground flow near Beatty, Nevada. A segment of the river 10 miles in length supports shallow, perennial water flow near in Oasis Valley in Nevada, but this “bitter water” river then generally flows in a sub-surface fashion as it bisects the remainder of the Amargosa Desert in Nevada. It flows adjacent to Stateline, Nevada and then southerly through the towns of Death Valley Junction, Shoshone, Hot Springs and Tecopa, in California. It crosses State Highway (SH) 127 and terminates in the lowest elevation area in the United States: Badwater Basin, within Death Valley National Park (DVNP).

Water runoff from the Bullfrog Hills, Yucca Mountain, Shoshone and Spring Mountains, in Nevada, all contribute to Amargosa River water flow in California. The latter Spring Mountain area is suspected to provide a substantial amount of this runoff contribution. The Lower Carson Slough tributary of the Amargosa serves as a primary drainage for a portion of Ash Meadows and the southern portion of the Amargosa Desert in Nevada. These watersheds contribute to a largely subterranean Amargosa River at Franklin Playa in California. Several mountain ranges and alluvial basins in California, particularly Eagle Mountain and the Resting Spring Mountain Range in the upper California reach of the river, the Nopah and Kingston Mountain Ranges, as well as California Valley, progressively add to central Amargosa River water flow. Major river tributaries include the aforementioned Lower Carson Slough in the northern reach of the river, China Ranch Wash in the central reach, and Salt Creek in the south.

The Amargosa flows extensively underground, surfacing perennially at only two areas in California (Shoshone-Hot Springs and Tecopa-Sperry). Ephemeral surface flows and salt flats are common in the Upper reaches of the Amargosa River. Shallow perennial water flow and clay-hole ponding are common in the Shoshone Segment of the river. Perennial ponding, as well as ephemeral mudflats, are common in the Grimshaw Reach of the river. A substantial perennial water flow begins in the Amargosa Canyon Segment, which continues through the Amargosa Canyon Area of Critical Environmental Concern and the Kingston Range Wilderness, to Sperry Siding. This historic railroad depot is located on the abandoned Tonopah & Tidewater Railroad (TNTRR). Between Sperry Siding and the eastern boundary of DVNP at SH 127, water flows over the years have alternated between intermittent and perennial flows, with ponding occurring in ephemeral years. Shallow, perennial flows beneath SH 127 have been recorded as the norm in recent years, following largely ephemeral flows in the early 1990's. These ephemeral and/or perennial surface water flows, contribute to the perennial subterranean flow which terminates in Badwater Basin, within DVNP.

Lands along the river in California are largely in Federal ownership, i.e., approximately 53.25 riverine miles are public lands managed by the BLM and approximately 45 additional riverine miles occur within DVNP. Substantial private ownership (3.5 riverine miles) occurs along the river in the vicinity of Shoshone, both north and south of SH 178. A degree of river diversion and modification has also occurred on the Shoshone-side of



SH 178. A total of 2.5 riverine miles are also privately owned in the Grimshaw Lake reach of the river; as is a total of 2.5 riverine miles in the Amargosa Canyon Segment.

The TNTRR, abandoned and dismantled in the 1940's, parallels the river for a majority of its length in California. This railroad once crossed the river on wooden bridges at several sites in California, though only three historic crossings occurred in the high water flow segment of the river occurring between Shoshone and Sperry Siding. A pedestrian trail now exists on the TNTRR, which is breached in many areas between Shoshone and Sperry. Few roads occur immediately adjacent to the river in the Shoshone to Sperry Siding Segment, although SH 178, Tecopa Hot Springs Road and Old Spanish Trail Highway do cross this river, widely spaced over a 21 mile span of the river. Several roads parallel and cross the river in the Sperry Siding to SH 127 Segment of the river. Further, an access road to the popular Dumont Dunes Off-highway Vehicle Area parallels the river in this segment for four miles, crossing the river once at the entrance to this public land use area.

## **Description of Segment(s) Under Consideration**

Considerations for NWSRS eligibility are based on resource values, land ownership patterns, shoreline development, proximity of roads and previous river modifications. These standard considerations were augmented with discussions with the National Park Service at DVNP and with California's statewide river conservation group, Friends of the River.

As a consequence of the analysis documented herein, **an eligibility determination for a 26-mile length segment of the Amargosa River occurring in California, has been made**. Segments identified as eligible for consideration of Wild and Scenic River designation include the Shoshone to Tecopa Segment (10 miles), which spans the river in a southerly fashion between SH 178 and Old Spanish Trail Highway; the Tecopa to Sperry Siding Segment (9 miles); and the Sperry Siding to State Highway 127 Segment (7 miles). The required suitability study on these segments will be deferred until completion of the NEMO Plan amendment to the CDCA Plan.

## **Recommended NWSRS Segment Classification and Land Ownership**

Once determined eligible, river segments are tentatively classified for study as either wild, scenic, or recreational, based on the degree of access and amount of development along the river area. If a river or segment is designated by Congress, the enabling legislation generally specifies the classification.

Accessibility, primitive nature, number and type of land developments, structures, water resource developments, and water quality were all considered in assigning classifications. The primary criteria for the three classifications are outlined below [from *A Compendium of Questions & Answers Relating to Wild & Scenic Rivers* (Technical Report of the Interagency Wild and Scenic Rivers Coordinating Council 1999)]:



**Wild River Areas:** Those rivers, or sections of rivers, that are free from impoundments, generally inaccessible except by trail (no roads), with watersheds or shorelines essentially primitive, and having unpolluted waters.

**Scenic River Areas:** Those rivers, or sections of rivers, that are free from impoundments, having shorelines or watersheds largely primitive and undeveloped, but accessible in places by roads (i.e., roads may cross but generally not parallel [in close proximity to] the river. These rivers or segments of rivers are usually more developed than wild and less developed than recreational. This classification may or may not include scenery as a Outstandingly Remarkable Value (ORV).

**Recreational River Areas:** Those rivers or sections of rivers that are readily accessible by road or railroad, may have had some development of the shoreline, and may have had some impoundment or diversion in the past. This classification, does not, however, imply that recreation is an ORV.

With these criteria in mind, as well as ORV data related to differing segments of the Amargosa River, the following classifications have been recommended for that portion of the river determined eligible for inclusion to the NWSRS:

<u>Riverine Segment</u>	<u>Classification</u>	<u>Public Land Miles</u>	<u>Private Land Miles</u>
Shoshone to Tecopa	Scenic	6.25	3.75
Tecopa to Sperry Siding	Wild	6.50	2.50
Sperry Siding to SH 178	Recreational	7.00	0.00

## Reasons for Consideration

The Amargosa River was considered eligible for inclusion in the NWSRS because of values identified by the BLM in the completed CDCA Plan and during development of the ongoing NEMO Plan. Strong support for such WSR designation has been offered by the California Native Plant Society, Friends of the River, The Nature Conservancy, the Sierra Club, and the local community.

## Outstanding Remarkable Values

All segments identified as eligible on public lands contain Outstandingly Remarkable Scenic Values (ORVs), i.e., Class “A” scenic quality, per BLM Manual guidelines. Two specific public land areas in these segments, the Amargosa Canyon and Grimshaw Lake Natural Areas, have been previously designated as Areas of Critical Environmental Concern (ACECs) in part to their spectacular scenery. A portion of the Kingston Range



Wilderness is also encompassed by these segments. Regionally rare plant communities such as Black Willow (*Salix nigra*)-Arroyo Willow (*S. lasiolepis*) and Cottonwood (*Populus fremontii*) Riparian Galleries, Mesquite (*Prosopis glandulosa*) Bosque, as well as alkaline meadow, lacustrine, emergent and cliffside spring plant communities, can also be found in abundance along this portion of the river. Wildlife supported by these regionally rare plant communities include a high percentage of endemic species, which occur nowhere else on earth, or in very low numbers outside of this portion of the river. Several threatened and endangered species, both plant and animal, occur in or use these segments, as well as a host of sensitive and/or special concern species. Over 260 bird species have been recorded. The presence of flowing water in these segments has served to attract humans for thousands of years. The high relief, stark topography and lush riparian vegetation provided by these segments continue to offer many opportunities for non-intrusive recreation.

ORVs for this portion of the Amargosa River include the following:

**Animals and Plants:** The state and federally listed-endangered Amargosa vole (*Microtus californicus scirpensis*) occurs exclusively in meadow and riparian habitats along these segments, and a large portion of the central Amargosa has been designated as critical habitat for this endemic species. The similarly listed endangered Least Bells Vireo (*Vireo bellii pusillus*) and Southwestern Willow Flycatcher (*Empidonax trailli extimus*) also utilize these segments, with the former known to nest and the latter suspected to occur only during migration seasons. So to, with the State of California listed-threatened Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*) and Swainson's Hawk (*Buteo swainsoni*), where the former is known to nest and the latter is suspected only during migration seasons. Two desert fish species, the Amargosa Pupfish (*Cyprinodon nevadensis amargosae*) and the Amargosa Speckled Dace (*Rhynchithys osculus amargosae*), also occur in these segments and are both designated as sensitive species by the BLM. The State of California and federally listed- endangered Amargosa Niterwort (*Nitrophila mohavensis*), and possibly the federally listed-threatened Spring-loving Centaury (*Centaureum namophilum namophilum*), also occur along a portion of these segments.

**Geologic:** These segments of the Amargosa River have been carved into a colorful array of spires, mesas cliffs and canyons over the years by water flow of varying velocities. The ancient Tecopa lake-bed is also found in the central segment, and contains fascinating landforms and extensive fossils, including many not recorded frequently in the region.

**Physiographic:** Sites along these segments indicate a continuing human occupation by indigenous peoples for over 10,000 years. The Old Spanish Trail crosses the River in the central segment and was one of the few pioneer trails used for both east and west travel. Several sites along these segments are described by famed explorers such as Kit Carson and Colonel John C. Fremont. The Tonopah and Tidewater (TNT) Railroad, which traverses a majority of identified segments provided an historic support function for the



remote mining communities located in the Death Valley Region, in the early part of the 20<sup>th</sup> century.

**Recreational:** As one of the few surface water, riparian vegetation and high canyon density locales in the region, these segments of the Amargosa offer visitors unusual river and canyon-based opportunities. Particularly related to hiking, exploration, bird watching, photography and equestrian use, in rugged and physically challenging terrain.

**Scenic:** These segments of the Amargosa flow past unusual desert wetlands and hot spring creeks, ancient lake-beds, mesas and mudflats; an abandoned railroad and human ruins of all kinds; colorful rock formations and precipitous cliffs; expansive meadows and even waterfalls. The lush riparian and wetland plant communities present along these segments contrast dramatically with the surrounding stark, desert landscape.

**Wilderness:** The central segment would encompass a portion of the Kingston Range Wilderness, an area where little human modification of the landscape is evident. An opportunity to experience solitude in a Mojave Desert area untrammelled by man and supporting natural processes, is provided in this segment.

## Interim Protection

The WSR Act and Federal guidelines require Federal agencies, upon determination of WSR eligibility, to provide interim protection and management for a river's free-flowing character and any identified outstandingly remarkable values, subject to valid existing rights, until such time as a suitability study is completed. Upon study completion, the Federal agency (BLM in this instance) then makes a recommendation to Congress, and Congress then acts on that recommendation.

## Management Standards and Guidelines for National Wild and Scenic Rivers

The Wild and Scenic Rivers Act (Public Law 90-542, as amended) established a method of providing Federal protection for certain of our remaining free-flowing rivers, and preserving these locales for the use and enjoyment of present and future generations. Such designated rivers benefit from the protective management which the act provides.

Section 10(a) of the WSR Act states:

*“Each component of the NWSRS shall be administered in such a manner as to protect and enhance the values which caused it to be included in said system without, insofar as is consistent therewith, limiting other uses that do not substantially interfere with public use and enjoyment of these values. In such administration, primary emphasis shall be given to protecting its esthetic, scenic, historic, archeologic, and scientific features. Management plans for any such component may establish varying degrees of intensity for its protection and development, based on the special attributes of the area.”* This section is generally interpreted by the Secretary of the Interior as a stated



non-degradation and enhancement policy for all designated river areas, regardless of classification.

The following National Standards and Guidelines are summarized from BLM Manual 8351 [Wild and Scenic Rivers-Policy and Program Direction for Identification, Evaluation and Management (1992)]. These standards/guidelines are intended to apply to formally-designated rivers through incorporation into, or amendment of, resource or land use management plans. Incorporation or amendment efforts are typically completed within three years of formal WSR designation. However, these guidelines also apply, on an interim basis, as described above. For the sake of clarity, guidelines are presented for each separate river classification (wild, scenic and recreational).

### **Wild River Areas**

-are defined by the WSR Act to include *“those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds and shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.”*

-are to be managed with a primary objective of providing primary emphasis to protection of identified ORVs, while providing consistent, river-related, outdoor recreation opportunities in a primitive setting.

-where National Management Standards/Guidelines include allowable practices such as construction of minor structures related to wildlife habitat enhancement, protection from fire, and rehabilitation or stabilization of damaged resources, provided the area will remain natural-looking and the practices or structures will harmonize with the environment. Developments such as trails, bridges, occasional fencing, natural-appearing water diversions, ditches and water management devices, may be permitted if they are unobtrusive and do not have a significant, adverse impact on the natural character of the river area. The following **Wild River Program Management Standards** apply:

**a. Forestry Practices** - Cutting of trees not permitted except when needed in association with a primitive recreation experience (such as clearing trails, for visitor safety purposes, or for fire control). Timber outside the boundary, but within visual corridors, should where feasible, be managed and harvested in a manner designed to provide special emphasis on visual quality.

**b. Water Quality** - Conditions will be maintained or improved to meet Federal criteria or federally-approved State Standards. River management plans shall prescribe a process for monitoring water quality on a scheduled basis.

**c. Hydroelectric Power and Water Resource Development** - No such development would be permitted in the channel or river corridor. All water supply dams and major diversions are prohibited. The natural appearance and essentially primitive character of the river area must be maintained. Federal agency groundwater development for range,



wildlife, recreation or administrative facilities may be permitted if there are no adverse effects on ORVs.

**d. Mining** - New mining claims and mineral leases are prohibited within 0.25 mile of the river. Valid existing claims would not be abrogated and, subject to existing regulations, e.g., 43 CFR 3809, and any future regulations the Secretary of the Interior may prescribe to protect the rivers included in the NWSRS, existing mining activity would be allowed to continue. All mineral activity on federally administered land must be conducted in a manner that minimizes surface disturbance, water sedimentation, pollution and visual impairment. Reasonable mining claim and mineral lease access will be permitted. Mining claims beyond 0.25 mile of the river, but within the wild river boundary, and perfected after the effective date of designation, can be patented only as to the mineral estate and not the surface estate.

**e. Road and Trail Construction** - No new roads or other provisions for overland motorized travel would be permitted within a narrow incised river valley or, if the river valley is broad, within 0.25 mile of the river bank. A few inconspicuous roads leading to the boundary of the river area and unobtrusive trail bridges may be permitted.

**f. Agricultural Practices and Livestock Grazing** - Agricultural use is restricted to a limited amount of domestic livestock grazing and hay production to the extent currently being practiced. Row crops are prohibited.

**g. Recreation Facilities** - Major public use areas, such as campgrounds, interpretive centers, or administrative headquarters are located outside of wild river areas. Simple comfort and convenience facilities, such as toilets, tables, fireplaces, shelters and refuse containers may be provided as necessary within the river area. These should harmonize with the surroundings. Unobtrusive hiking and equestrian trail bridges could be allowed on tributaries, but would not normally cross the designated river.

**h. Public Use and Access** - Recreation use including, but not limited to, hiking, fishing, hunting and boating is encouraged in wild river areas to the extent consistent with the protection of the river environment. Public use and access may be regulated and distributed where necessary to protect and enhance wild river values.

**i. Rights-of-Way** - New transmission lines, natural gas lines, water lines, etc., are discouraged unless specifically prohibited outright by other plans, orders or laws. Where no reasonable alternative exists, additional or new facilities should be restricted to existing rights-of-way. Where new rights-of-way are unavoidable, locations and construction techniques will be selected to minimize adverse effects on wild river area-related values and fully evaluated during the site selection process.

**j. Motorized Travel** - Although this use can be permitted, it is generally not compatible with this river classification. Normally, motorized use will be prohibited in a wild river



area. Prescriptions for management of motorized use may allow for search and rescue/emergency situations.

### **Scenic River Areas**

-are defined by the WSR Act to include *“those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.”*

-are to be managed with a primary objective of maintaining and providing outdoor recreation opportunities in a near-natural setting. The basic distinctions between “wild” and “scenic” classifications, involve varying degrees of development, types of land use, and road accessibility. In general, a wide range of agricultural, water management, silvicultural and other practices could be compatible with scenic classification values, providing such practices are carried out in a manner not resulting in a substantial adverse effect on the river and its immediate environment.

-where National Management Standards/Guidelines include the same considerations set forth for wild rivers, except that motorized vehicle use may in some cases be appropriate and that development of larger scale public-use facilities within the river area, such as moderate-sized campgrounds, interpretive centers, or administrative headquarters would be compatible, if such facilities were screened from the river. The following **Scenic River Program Management Standards** apply:

**a. Forestry Practices** - Silvicultural practices, including timber harvesting could be allowed, provided that such practices are carried out in such a way that there is no substantial adverse effect on the river and its immediate environment. The river should be maintained in its near-natural condition.

Timber outside the boundary, but within the visual screen area, should be managed and harvested in a manner designed to provide special emphasis on visual quality. Preferably, reestablishment of tree cover would be through natural revegetation. Cutting of dead and down materials for fuelwood will be limited. Where necessary, restrictions on the use of wood for fuel may be prescribed.

**b. Water Quality** - Conditions will be maintained or improved to meet Federal criteria or federally-approved State Standards. River management plans shall prescribe a process for monitoring water quality on a scheduled basis.

**c. Hydroelectric Power and Water Resource Development** - No such development would be permitted in the channel or river corridor. Flood control dams and levees would be prohibited. All water supply dams and major diversions are prohibited. Maintenance of existing facilities and construction of some new structures would be permitted, provided that the area remains natural in appearance and the practices or structures harmonize with the surrounding environment.



**d. Mining** - Subject to existing regulations, e.g. 43 CFR 3809, and any future regulations the Secretary of the Interior may prescribe to protect the rivers included in the NWSRS, new mining claims and mineral leases can be allowed. All mineral activity on federally administered land must be conducted in a manner that minimizes surface disturbance, water sedimentation, pollution and visual impairment. Reasonable mining claim and mineral lease access will be permitted. Mining claims within the wild river boundary, and perfected after the effective date of designation, can be patented only as to the mineral estate and not the surface estate.

**e. Road and Trail Construction** - Roads may occasionally bridge the river and short stretches of conspicuous or lengthy stretches of inconspicuous and well-screened roads would be allowed. Maintenance of existing roads and any new roads will be based on the type of use for which the roads are constructed and the type of use that will occur in the river area.

**f. Agricultural Practices and Livestock Grazing** - In comparison to wild river areas, a wider range of agricultural and livestock grazing uses are permitted, to the extent currently being practiced. Row crops are not considered as much of an intrusion of the “largely primitive” nature of scenic corridors, as long as there is not a substantial adverse effect on the natural-like appearance of the river area.

**g. Recreation Facilities** - Larger-scale public use areas, such as moderate-sized campgrounds, interpretive centers, or administrative headquarters, are allowed if such facilities are screened from the river.

**h. Public Use and Access** - Recreation use including, but not limited to, hiking, fishing, hunting and boating is encouraged in scenic river areas to the extent consistent with the protection of the river environment. Public use and access may be regulated and distributed where necessary to protect and enhance scenic river values.

**i. Rights-of-Way** - New transmission lines, natural gas lines, water lines, etc., are discouraged unless specifically prohibited outright by other plans, orders or laws. Where no reasonable alternative exists, additional or new facilities should be restricted to existing rights-of-way. Where new rights-of-way are unavoidable, locations and construction techniques will be selected to minimize adverse effects on scenic river area-related values and fully evaluated during the site selection process.

**j. Motorized Travel** - This use, on land or water, could be permitted, prohibited or restricted to protect river values. Prescriptions for management of motorized use may allow for search and rescue/emergency situations.

### **Recreational River Areas**

-are defined by the WSR Act to include *“those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their*



*shorelines, that may have undergone some development along their shorelines, and that may have undergone some impoundment or diversion in the past.”*

-are to be managed with an objective of protecting and enhancing existing recreational values. The primary objective is to provide opportunities for the public to participate in recreation activities dependent on, or enhanced by, the largely free-flowing nature of the river.

-where National Management Standards/Guidelines include allowable practices such as construction of recreation facilities in proximity to the river, although recreational river classification does not require extensive recreational developments. Such facilities are still to be kept to a minimum, with visitor services provided outside the river area. Future construction of impoundments, diversions, straightening, rip-rapping and other modification of the water way or adjacent lands would not be permitted, except where such developments would not have a direct and adverse effect on the river and its immediate environment. The following **Recreational River Program Management Standards** apply:

**a. Forestry Practices** - Silvicultural practices, including timber harvesting could be allowed under standard restrictions to avoid adverse effects on the river environment and its associated values.

**b. Water Quality** - Conditions will be maintained or improved to meet Federal criteria or federally-approved State Standards. River management plans shall prescribe a process for monitoring water quality on a scheduled basis.

**c. Hydroelectric Power and Water Resource Development** - No such development would be permitted in the channel or river corridor. Existing low dams, diversion works, rip rap and other minor structures may be maintained, provided the waterway remains generally natural in appearance. New structures may be allowed, provided that the area remains natural in appearance and the practices or structures harmonize with the surrounding environment.

**d. Mining** - Subject to existing regulations, e.g. 43 CFR 3809, and any future regulations the Secretary of the Interior may prescribe to protect the rivers included in the NWSRS, new mining claims and mineral leases can be allowed. All mineral activity on federally administered land must be conducted in a manner that minimizes surface disturbance, water sedimentation, pollution and visual impairment. Reasonable mining claim and mineral lease access will be permitted. Mining claims within the wild river area boundary perfected after the effective date of designation can be patented only as to the mineral estate and not the surface estate.

**e. Road and Trail Construction** - Existing parallel roads can be maintained on one or both river banks. There can be several bridge crossings and numerous river access points.



**f. Agricultural Practices and Livestock Grazing** - In comparison to scenic river areas, lands may be managed for a full range of agricultural and livestock grazing uses, consistent with current practices.

**g. Recreation Facilities** - Interpretive centers, administrative headquarters, campgrounds and picnic areas may be established in proximity to the river. However, recreational classification does not require extensive recreation development.

**h. Public Use and Access** - Recreation use including, but not limited to, hiking, fishing, hunting and boating is encouraged in recreational river areas to the extent consistent with the protection of the river environment. Public use and access may be regulated and distributed where necessary to protect and enhance recreational river values.

**i. Rights-of-Way** - New transmission lines, natural gas lines, water lines, etc., are discouraged unless specifically prohibited outright by other plans, orders or laws. Where no reasonable alternative exists, additional or new facilities should be restricted to existing rights-of-way. Where new rights-of-way are unavoidable, locations and construction techniques will be selected to minimize adverse effects on recreational river area-related values and fully evaluated during the site selection process.

**j. Motorized Travel** - This use, on land, will generally be permitted, on existing roads. Controls will usually be similar to that of surrounding lands. Motorized travel on water will be in accordance with existing regulations or restrictions.

### **Management Objectives Common to All Wild, Scenic and Recreational Rivers**

**a. Wilderness and Wilderness Study Areas** - Management of river areas which overlap designated wilderness areas or wilderness study areas will meet whichever standard is highest. If an area is released from wilderness study area status and the associated Interim Management Policy, the applicable river classification standards and guidelines would then apply.

**b. Fire Protection and Suppression** - Management and suppression of fires within a designated river area will be carried out in a manner compatible with contiguous Federal lands. On wildfires, suppression methods will be utilized that minimize the long term impacts on the river and river area. Pre-suppression and prevention activities will be conducted in a manner which reflects management objectives for the specific river segment. Prescribed fire may be utilized to maintain or restore ecological condition or meet objectives of the river plan.

**c. Insects, Diseases and Noxious Weeds** - The control of forest and rangeland pests, diseases and noxious weed infestations will be carried out in a manner compatible with the intent of the WSR Act and management objectives of contiguous Federal lands

**d. Cultural Resources** - Historic and prehistoric resource sites will be identified, evaluated and protected in a manner compatible with the objectives of the river and in



accordance with applicable regulations and policies. Where appropriate, historic or prehistoric sites will be stabilized, enhanced and interpreted.

**e. Fish and Wildlife Habitat Improvement** - The construction and maintenance of minor structures for the protection, conservation, rehabilitation and enhancement of fish and wildlife habitat are acceptable, provided they do not affect the free-flowing characteristics of the river, are compatible with the classifications, that the area remains natural in appearance and the practices or structures harmonize with the surrounding environment.



## Appendix P

### Development of Standards for Public Land Health and Grazing Management Guidelines

Congress passed the Taylor Grazing Act in 1934 to direct occupancy and use of public rangelands, to preserve natural resources from destruction or unnecessary injury, provide for the orderly use, improvement, and development of rangelands. Since enactment of the Taylor Grazing Act, several studies and reports have identified problems on the western rangelands. The Public Rangelands Improvement Act (PRIA, 1978) identified that rangelands are producing below their potential, rangelands will remain in an unsatisfactory condition and some areas may decline further under present levels of funding, and these unsatisfactory conditions present a high risk of soil loss, water loss, loss of or threats to fish and wildlife habitat, loss of forage for livestock and grazing animals, and unpredictable and undesirable long term local and regional climatic and economic changes.

Resource conditions have improved since passage of PRIA, but many riparian areas continue to be degraded and are not functioning properly. The Director of the Bureau of Land Management requested the agency's National Public Lands Advisory Council to recommend ways to improve BLM's rangeland management program. In 1991, the Council commissioned a blue-ribbon panel of professional ecologists and rangeland managers who produced a report titled *Rangeland-Program Initiatives and Strategies*. Their report concluded that BLM's primary objectives should be to protect the basic components of rangelands: soil, water, and vegetation.

The BLM initiated a new effort, in 1993, commonly referred to as "Rangeland Reform 94." The focus of this effort is to enhance the environmental health of public rangelands. This effort was initiated with the publication of *Rangeland Health: New Methods to Classify, Inventory, and Monitor Rangelands*, 1994. The report was published by the Committee on Rangeland Classification, Board of Agriculture, of the National Research Council. The report explained criteria and indicators of rangeland health, assessment practices, and inventory and monitoring requirements.

The "Rangeland Reform" initiative culminated in a national environmental impact statement to provide grazing management direction to improve ecological conditions while providing for sustainable development on the land. In 1995, the Secretary of the Interior developed new grazing regulations to implement needed changes in BLM's rangeland management program.

#### Purpose and Need

The "Rangeland Reform 94" effort resulted in the publication of a final rule for Grazing Administration of Public Lands, on February 22, 1995, that became effective August 21, 1995. Under section 4108.2 of these regulations the BLM State Director is required to



develop State or regional standards and guidelines for grazing administration in consultation with a BLM Resource Advisory Council (District Advisory Council), other agencies, and the public. The purpose of the standards and guidelines is to ensure the long-term health of public rangelands as indicated by the following quotations from the Federal Register, Vol. 60, No. 35, page 9956, dated February 22, 1995:

"The guiding principles for standards and guidelines require that State or regional standards and guidelines address the basic components of healthy rangelands".

"The Department intends that the standards and guidelines will result in a balance of sustainable development and multiple use along with progress towards attaining healthy, properly functioning rangelands".

"The Department believes that by implementing grazing-related actions that are consistent with the fundamentals of Subpart 4180.1 and the guiding principles of Subpart 4180.2, the long-term health of public rangelands can be ensured".

### **Fundamentals of Rangeland Health**

In its report, the Committee for the National Research Council defined rangeland health as "...the degree to which the integrity of the soil and ecological processes of rangeland ecosystems are sustained, " and in particular those "ecological processes that are most important in sustaining the capacity of rangeland to satisfy values and produce commodities." The committee from the Council recommended "...the determination of whether a rangeland is healthy, at risk, or unhealthy should be based on the evaluation of three criteria: degree of soil stability and watershed function, integrity of nutrient cycles and energy flow, and presence of functioning recovery mechanisms" (Ibid). When the factors of a healthy rangeland site are met, then values and commodities will be conserved. The "Rangeland Health Matrix" developed by the National Research Council is presented at the end of this section.

Title 43 of the Code of Federal Regulation, Section 4180 of the grazing regulations directs the authorized officer to ensure the following conditions of rangeland health exist and that each of these components are addressed during the development of regional standards:

- (a) Watersheds are in or are making significant progress toward properly functioning physical condition, including their upland, wetland, and aquatic components; soil and plant conditions support infiltration, soil moisture storage, and the release of water that are in balance with climate and landform and maintain or improve water quality, water quantity, and the timing and duration of flow.
- (b) Ecological processes, including the hydrologic cycle, nutrient cycle, and energy flow, are maintained, or there is significant progress toward their attainment, in order to support healthy biotic populations and communities.
- (c) Water quality complies with State water quality standards and achieves, or is making



significant progress toward achieving, established BLM management objectives such as meeting wildlife needs.

- (d) Habitats are, or are making significant progress toward being restored or maintained for Federal threatened and endangered species, Federal Proposed, Federal Candidate and other special status species.

Items (a) and (b) prescribe physical and biological characteristics of rangeland health. Items (c) and (d) describe legal requirements that will be met when healthy rangelands are properly functioning (43 CFR 4180.1). In addition, habitat quality for native plant and animal populations and communities is identified as an ecological component that must be addressed in 43 CFR 4180.2 when developing regional standards.

### **Attributes for Standards and Guidelines**

The fundamentals of rangeland health, guiding principles for standards and the fallback standards address ecological components that are affected by all uses of public rangelands, not just livestock grazing. However, the scope of this final rule, and therefore the fundamental of rangeland health of part 4180.1, and the standards and guidelines to be made effective under part 4180.2, are limited to grazing administration (Federal Register, Vol. 60, No. 35, pg. 9970-9971). The following are characteristics of standards and guidelines.

#### **Standard:**

- (1) is criterion regarding a resource quality or quantity upon which a judgement or decision is based (e.g., a statement concerning expected ecosystem or rangeland health);
- (2) is measurable;
- (3) establishes parameters within which resource uses and management activities can be conducted; and
- (4) should have observable indicators.

#### **Guideline:**

- (1) describes a practice, prescription, method or technique used to ensure that grazing management activities meet standards;
- (2) is either a set of management practices from which one or more practices is selected; or is a specific, required management practice;
- (3) could be adapted or changed when monitoring or other information indicates the guidelines are not effective or a better means of meeting applicable standard exists.

At a minimum State or regional guidelines must address the following:

- (1) maintain or promote adequate amounts of vegetative ground cover, including standing plant material and litter, to support infiltration, maintain soil moisture storage, and stabilize soils;



- (2) maintain or promote subsurface soil conditions that support permeability rates, appropriate to climate and soils;
- (3) Maintain, improve or restore riparian-wetland functions including energy dissipation, sediment capture, groundwater recharge and stream bank stability;
- (4) Maintain or promote stream channel morphology (e.g. gradient width/depth ratio, channel roughness and sinuosity) and functions appropriate to climate and landform;
- (5) Maintain or promote the appropriate kinds and amounts of organisms, plants and animals to support the hydrologic cycle, nutrient cycle, and energy flow;
- (6) Promote the opportunity for seedling establishment of appropriate plant species when climate conditions and space allow;
- (7) Maintain, restore or enhance water quality to meet management objectives, such as meeting wildlife needs;
- (8) Restore, maintain or enhance habitats to assist in the recovery of Federal threatened or endangered species;
- (9) Restore, maintain or enhance habitats of Federal Proposed, Category 1 and 2 Federal candidate, and other special status species to promote their conservation;
- (10) Maintain or promote the physical and biological conditions to sustain native populations and communities;
- (11) Emphasize native species in the support of ecological function; and
- (12) Incorporate the use of non-native plant species only in those situations in which native species are not available in sufficient quantities or are incapable of maintaining or achieving properly functioning conditions and biological health.

### **Resource Advisory Council Direction**

Under the February 22, 1995, rulemaking, the Secretary of the Interior called for the formation of Resource Advisory Councils (RACs) to advise the BLM about defining areas and the development of standards and guidelines for those areas. The RACs will advise the BLM concerning preparation, amendment, and implementation of land use plans. The existing California Desert District Advisory Council (DAC) will serve as the California Desert District's Resource Advisory Council. The rulemaking directs the State Director to coordinate with Indian tribes, the public, and affected State and Federal agencies during development of standards and guidelines.

The staffs in areas once defined as the Bakerfield, Ukiah, and Susanville Districts, coordinated on a state-wide planning effort called *Rangeland Health Standards and Guidelines for California and Northwestern Nevada, Environmental Impact Statement* to adopt regional standards for rangeland health and guidelines for grazing management on BLM-administered lands. The DAC chose not to initiate a new planning process for the express purpose of analyzing livestock standard and guidelines nor contribute staff to the statewide effort. The Council preferred instead to develop standards for all public land uses through several ongoing planning efforts. In addition, they felt it would be more efficient to address standards at the planning area level instead of desert-wide, and the CDCA Plan primarily conforms to the fundamentals of rangeland health. These planning efforts include the Western Mojave Coordinated Management Plan, Northern and Eastern



Mojave Planning Effort, Coachella Valley Habitat Conservation Plan, Northern and Eastern Colorado Desert Coordinated Management Plan, and Plan Amendments for the South Coast Resource Management Plan and the Eastern San Diego County Management Framework Plan.

The DAC is actively involved in development of Standards for Public Land Health and Guidelines for Grazing Management. Early in the process a subcommittee was formed to develop a proposal for standards and guidelines, their recommendations are listed at the end of this section. Upon completion of the Northern and Eastern Mojave Planning Effort the State Director will submit a set of standards and guidelines for approval by the Secretary of the Interior. Adoption of the regional standards will occur when the Secretary concurs. Until adoption of the regional standards, the fallback standards and guidelines or existing planning and activity plan guidance will be utilized, depending on which one more closely matches the fundamentals of rangeland health.

### **Standards and Guidelines- Constraints and Development**

1. The standards for public land health apply to resource uses and activities undertaken on the public lands. The guidelines for livestock grazing apply only to livestock grazing management practices. Guidelines for activities other than livestock grazing are not proposed at this time; however, BLM intends to formulate additional guidelines in the future as opportunities present themselves.
2. The standards and the guidelines for livestock grazing are subject to the approval of the Secretary of Interior. Pending Secretarial approval, the National Fallback Standards and Guidelines apply.
3. The intent of the standards and guidelines is to ensure a balance of sustainable development and multiple use along with progress toward attaining healthy, properly functioning ecosystems.
4. The standards and applicable guidelines will be implemented through terms and conditions of permits, leases, and other authorizations or actions issued or undertaken in accordance with BLM's approved land use plans.
5. To the extent possible, implementation will be determined and applied through collaborative management approaches with other land owners, organizations, and agencies on a regional or watershed scale, or in relation to discreet land use plan units such as areas designated for OHV use as open, limited, or closed.
6. At a minimum, implementation will be coordinated and in consultation with the affected permittees/lessees, the appropriate State agencies, tribes, and interested public.
7. BLM's grazing regulations require that "appropriate action" be taken when "existing grazing management practices or levels of grazing use..are significant



factors in failing to achieve the standards and... guidelines". BLM will take corrective action as practicable for other management practices or uses not meeting the standards.

8. Some areas may require years to fully achieve the standards, due to natural factors such as climatic conditions, soils, presence of naturalized non-native plant species, and other related factors.
9. The values and demand for use of the public lands will continue to increase and be diverse.

In applying the standards and any applicable guidelines, BLM will emphasize a balanced approach to resource management, taking into account such factors as context and intensity of impacts and the opportunities for restoration.

## **Standards and Guidelines - DAC Recommendations**

### **Standards**

#### **Soils:**

Soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, geology, landform, and past uses. Adequate infiltration and permeability of soils allow accumulation of soil moisture necessary for optimal plant growth and vigor, and provide a stable watershed.

As indicated by:

- Canopy and ground cover are appropriate for the site;
- There is diversity of plant species with a variety of root depths;
- Litter and soil organic matter are present at suitable sites;
- Maintain the presence of microbiotic soil crusts that are in place;
- Evidence of wind or water erosion does not exceed natural rates for the site; and
- Hydrologic and nutrient functions maintained by permeability of soil and water infiltration are appropriate for precipitation.

#### **Native Species:**

Healthy, productive and diverse habitats for native species, including special status species (Federal T&E, Federal proposed, Federal candidates, BLM sensitive, or California State T&E, and CDD UPAs) are maintained in places of natural occurrence.

As indicated by:

- Photosynthetic and ecological processes continue at levels suitable for the site, season, and precipitation regimes;
- Plant vigor, nutrient cycle, and energy flow are maintaining desirable plants and ensuring reproduction and recruitment;
- Plant communities are producing litter within acceptable limits;
- Age class distribution of plants and animals are sufficient to overcome mortality fluctuations;



- Distribution and cover of plant species and their habitats allow for reproduction and recovery from localized catastrophic events;
- Alien and noxious plants and wildlife do not exceed acceptable levels;
- Appropriate natural disturbances are evident; and
- Populations and their habitats are sufficiently distributed to prevent the need for listing special status species.

### **Riparian/Wetland and Stream Function:**

Wetland systems associated with subsurface, running, and standing water, function properly and have the ability to recover from major disturbances. Hydrologic conditions are maintained.

As indicated by:

- Vegetative cover will adequately protect banks, and dissipate energy during peak water flows;
- Dominant vegetation is an appropriate mixture of vigorous riparian species;
- Recruitment of preferred species is adequate to sustain the plant community;
- Stable soils store and release water slowly;
- Plant species present indicate soil moisture characteristics are being maintained;
- There is minimal cover of invader/shallow-rooted species, and they are not displacing deep-rooted native species;
- Maintain shading of stream courses and water sources for riparian dependent species;
- Stream is in balance with water and sediment being supplied by the watershed;
- Stream channel size and meander is appropriate for soils, geology, and landscape; and
- Adequate organic matter (litter and standing dead plant material) is present to protect the site and to replenish soil nutrients through decomposition.

### **Water Quality:**

Water quality will meet State and Federal standards including exemptions allowable by law.

As indicated by:

- Dissolved oxygen levels, aquatic organisms and plants (e.g., macro invertebrates, fish and algae) indicate support of beneficial uses;
- Chemical constituents, water temperature, nutrient loads, fecal coliform and turbidity are appropriate for the site or source; and
- Best Management Practices will be implemented.

## **Guidelines for Grazing Management**

1. Management activities will maintain or promote canopy or ground cover that will provide for infiltration, permeability, soil moisture storage, and soil stability



appropriate for each plant community. The ground cover should maintain soil organisms and plants and animals to support energy flow, and hydrologic and nutrient cycles and energy flow.

2. When grazing practices alone are not likely to restore areas of low infiltration or permeability, land management treatments may be designed and implemented to attain improvement.
3. Management practices maintain or promote sufficient vegetation to maintain, improve or restore riparian-wetland functions of energy dissipation, sediment capture, groundwater recharge and stream bank stability, thus promoting stream channel morphology (e.g., gradient, width/depth ratio, channel roughness and sinuosity) and functions appropriate to climate and landform.
4. Grazing management practices maintain sufficient residual vegetation (if suitable) on both upland riparian sites to protect the soil from wind water erosion, to assist in maintaining appropriate soil infiltration and permeability, and to buffer temperature extremes.
5. Best Management Practices and other scientifically developed practices that enhance land and water quality should be used in the development of land use activity plans.
6. Grazing management practices promote healthy plant communities by providing for one or more of the following:
  - \* periodic rest or deferment from grazing during critical growth periods;
  - \* appropriate levels of plant consumption;
  - \* adequate recovery and regrowth periods; and
  - \* opportunity for seed dissemination and seedling establishment under favorable climatic conditions.
7. Grazing management practices address the kind, numbers, and class of livestock, season, duration, distribution, frequency, and intensity of grazing use and livestock's health.
8. Native plant species and natural revegetation are emphasized in the support of sustaining ecological functions and site integrity. Where seeding is required, on land treatment efforts, emphasis will be placed on using native plant species, or established alien species.
9. Grazing on designated ephemeral (annual and perennial species included) rangeland may be authorized if the following conditions are met:



- \* ephemeral vegetation is present in draws, washes, and under shrubs and has grown to usable levels at the time grazing begins;
  - \* sufficient surface and subsurface soil moisture exists for continued plant growth;
  - \* water sources, to the extent practical, will provide proper grazing distribution;
  - \* sufficient annual vegetation will remain on site to satisfy other resource concerns, (i.e., watershed, wildlife, wild horses and burros); and
  - \* monitoring is conducted during grazing season to determine if objectives are being met.
10. Natural occurrences such as fire, drought, flooding, and prescribed land treatments should be combined with livestock management practices to move toward the sustainability of biological diversity across the landscape, including the maintenance, restoration, or enhancement of habitat to promote and assist the recovery and conservation of threatened, endangered, or other special status species, by helping to provide natural vegetation patterns, a mosaic of successional stages, and vegetation corridors, and thus minimizing habitat fragmentation.
  11. Conservation of Federal threatened or endangered, proposed, candidate, and other special status species is promoted by the maintenance or restoration of their habitats.
  12. Develop practices to maintain, restore, or improve water quality for the enhancement of plant and animal resources in conformance with State or Federal standards.
  13. New facilities are located away from riparian-wetland areas if they conflict with achieving or maintaining riparian-wetland function. Existing facilities are used in a way that does not conflict with riparian-wetland functions or are relocated or modified when incompatible with riparian-wetland functions.
  14. The development of springs and seeps or other projects affecting water and associated resources shall be designed to protect ecological functions and processes.
  15. Range improvement projects are designed consistent with overall ecological functions and processes with minimum adverse impacts to other resources or uses of riparian/wetland and upland sites.
  16. Grazing management will occur in a way that does not encourage the establishment or spread of noxious weeds. In addition to mechanical, chemical, and biological methods of weed control, livestock may be used where feasible as a tool to inhibit or stop the spread of noxious weeds.



## BLM Preferred Standards – Changes in DAC Recommendations

The Desert Advisory Council proposed four standards, which, as modified, are the preferred alternative for adoption in the California Desert District, including the NEMO planning area. The BLM has made minor editorial changes to the wording proposed by the DAC in some instances, to clarify meaning, and these are not discussed. Other additions, deletions, or changes to the DAC Recommendations follow, with a short explanation after each modification (deletions are in strikethrough, additions are underlined and bolded):

1. Soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, ~~and~~ geology, **and land use**; -- *This addition was made to acknowledge that past land uses may affect site potential for these soil factors, for the reasonably foreseeable future.*
2. **Alien and noxious plants do not exceed acceptable levels**; -- *This addition was made in response to BLM policy to address this issue as a critical element of the human environment, in recognition of the many direct and indirect roles these plants have in interfering with the attainment and maintenance of diverse biological communities.*
3. ~~Water quality is improved or maintained at the highest level feasible.~~ -- *This was deleted as it was considered potentially unattainable, based on cost consideration alone. The benefits to wetland systems which would be derived from water quality maintenance or improvements provide the better standard to judge whether the BLM should pursue, them, and these would be based on the indicators outlined.*
4. ~~Vegetative cover of no less than 70 percent for a stream reach or the percentage that will adequately protects banks, and dissipates energy during peak water flows;~~ -- *This indicator was twofold, a quantitative indicator that was optional, or a qualitative indicator that was a requirement, i.e. that cover adequately protect banks. It matters as much where as how much cover there is. The qualitative indicator with a site-specific analysis is a more appropriate desert-wide standard (see also next standard).*
5. **Shading of stream courses and water sources support riparian vertebrates and invertebrates**; -- *This was added to supplement the vegetative cover indicator to assure optimal temperatures are maintained that sustain biotic communities within wetland systems.*
6. ~~If present, point bars are vegetated;~~ -- *This was deleted as it was considered potentially unattainable, based on site potential. Site-specific analysis can more appropriately determine whether point bars will sustain vegetation, given the frequency and size of flooding and soil depositional events.*
7. Water Quality will meet State and Federal standards **including exemptions allowable by law**. -- *This addition acknowledges that various uses of the public lands are covered by exemptions, under certain circumstances, and that those exemptions will be recognized.*



## **Appendix Q**

### **NORTHERN AND EASTERN MOJAVE PLAN ROUTE DESIGNATION PROCESS & METHODOLOGY**

#### **ROUTES OF TRAVEL: PROCESS**

Upon initiation of the Northern and Eastern Mojave Plan (NEMO Plan), it was determined that one product of the planning effort would be to designate all routes of travel, inclusive of washes inside of critical habitat for the Federally and State threatened desert tortoise. The scope of route designation was modified slightly in the Ivanpah area to reflect the boundary of the proposed conservation area. Completion of route designation will accomplish the objectives established in the California Desert Conservation Area (CDCA) Plan (1980), as amended. A NEMO Plan goal is to designate all routes of travel as "open", "limited" or "closed" within the scope of the designation effort. The Motorized-Vehicle Access element of the CDCA Plan will require an amendment relative to MUC "M" in which access is allowed on "existing" routes. (In MUC "L," access is directed toward use of approved routes of travel [i.e., designated as "open" or "limited"].

#### **Route Inventory**

To accomplish route designation, it was necessary to first identify the network of "existing" routes within desert tortoise critical habitat (also known as desert wildlife management area (DWMA)). According to the 1982 CDCA Plan amendment of the Motorized-Vehicle Access element, an existing route of travel is a route established before approval of the CDCA Plan in 1980 with a minimum width of two feet, and showing significant surface evidence of prior vehicle use or, for washes, having a history of prior use. However, an accurate inventory of routes existing in 1980 was not available. Thus, it was decided that a base line inventory of existing routes would be necessary for the NEMO Plan, and would become the inventory to which the route designation process would be applied.

In general, the process of route inventory began with a review of 7.5-minute USGS topographical maps and Desert Access Guides. The presence of every route appearing on a map was to be verified through an on-the-ground "survey" to affirm its location.

It was clear at the beginning of the route inventory process, that because of the large number of washes within DWMA's conforming to the definition of a wash as a route of travel according to the CDCA Plan, it would be virtually impossible to survey each wash in the inventory on the ground. Only those that have conventionally been used as routes of travel on a regular basis were actually surveyed. The first consideration for all washes was their suitability as desert tortoise habitat. The wash was then examined and a case had to be made



that they provided a primary recreational access linkage. The final decisions in this regard would not be made until analyses of conflicts and the issues became more clearly defined.

The Needles Field Office began the NEMO Plan route inventory effort with a base inventory as appears on USGS quadrangles and Desert Access Guides. In 1993, the inventory effort began with a full-time volunteer along with field office staff collecting route location data through on-the-ground examination. The objective was to drive every route within the planning area and record their locations. Initially, the data were transferred to MOSS (an early version of a Geographic Information System Database). Later, conversion to ARC/INFO (the current Geographic Information System Database) resulted in the loss of some information such as route identification numbers. As the inventory progressed through 1995, MOSS was no longer used and data were transferred directly to ARC/INFO.

Another effort to gather on-the-ground data commenced in the early part of 1998. BLM staff collected route data by driving as many of the routes in the largest DWMA (Piute-Fenner). For the two smaller DWMA's (Shadow Valley and Ivanpah), information regarding designation was based upon previous inventories, augmented with staffs' knowledge of the areas. Private landowners, user and interest groups were given the opportunity to review and comment on early route inventories and recommendations.

### **Route Designation**

Criteria established for route designation through the NEMO Plan to accomplish its goals must conform to Title 43 Code of Federal Regulations (CFR) Subpart 8342--Designation of Areas and Trails. Designation criteria per 43 CFR 8342.1 are as follow:

- (a) Areas and trails shall be located to minimize damage to soil, watershed, vegetation, air, or other resources of the public lands, and to prevent impairment of wilderness suitability.
- (b) Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protect endangered or threatened species and their habitats.
- (c) Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same of neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.
- (d) Areas and trails shall not be located in officially designated wilderness areas or primitive areas. Areas and trails shall be located in natural areas only if the authorized officer determines that off-road vehicle use in such



locations will not adversely affect their natural, esthetic, scenic, or other values for which such areas are established.

The Bureau recognizes the value of a motorized recreational touring network as identified through the NEMO Plan, and/or specific access requirements granted through the right-of-way process or other such authorizations. These specific requirements are generally reflected by the presence of paved and/or maintained dirt roads, the following categories of routes are designated "open" as exceptions to the designation criteria prescribed above:

- (a) paved roads
- (b) maintained County dirt roads
- (c) recreational touring routes

If the 43 CFR are applied and criteria do not apply, the routes are appropriate to designate "open", other factors may necessitate limiting or closing them to access (e.g., protection of cultural resource values). The criteria do not apply to routes outside proposed DWMAs; all existing routes outside proposed DWMAs are designated "open" unless other factors necessitate limiting or closing them to access or they have been evaluated through a route designation process..

Alternatives to closure of routes include the following through a designation of "limited" (from 1982 CDCA Plan amendment of the Motorized-Vehicle Access element):

- (a) number of vehicles allowed;
- (b) types of vehicles allowed;
- (c) time or season of vehicle use [e.g., seasonal opening of washes in proposed conservation areas for hunting purposes];
- (d) permitted or licensed vehicle use only; and
- (e) establishment of speed limits.

Access for wildlife management such as guzzler maintenance-can be afforded through a designation of "limited", with access limited to authorized users only:

Routes, which were recommended for closure, were reviewed using several criteria including:

- (a) Is the route a redundant route? Redundant routes are those which are "excess" or "more than are needed." In identifying redundant routes, the following definition is to be considered: A redundant route is one whose purpose is seemingly identical to that of another route, inclusive of providing the same or very similar recreation opportunities or experiences; and upon designating such a route as "closed," the use thereby redirected to another route or routes would be in accordance with the route designation criteria at 43 CFR 8342.1.



- (b) Is the route a problem route? A route that once furnished access to a point that now occurs in wilderness (a) could provide access to the boundary of that wilderness area, or (b) has become a management "problem" in that motorized access into wilderness has continued and no purpose would be served in establishing a trail head at that point. Existing access to cultural or other sensitive resources may have resulted in degradation of the resources.
- (c) Is the route considered a non-existent route? Non-existent routes are defined in the context of the NEMO Plan as routes that are no longer used and have been substantially reclaimed by the forces of nature. Some routes that are delineated on the most recent versions of 7.5-minute USGS maps cannot be located due to complete or near-complete natural reclamation. Some of these are intermittently visible, encouraging cross-country travel where surface evidence of the route disappears or, although still visible, travel upon them would require the crushing of substantial vegetation.

There is a loosely defined recreational touring network throughout the NEMO Planning Area. Recreational touring involves the traditional use of certain washes as part of that route network. The following exceptions to the designation criteria that would generally prohibit use of wash routes in DWMAs apply, allowing specific washes to be designated "open" or "limited":

- (a) washes which are identified as part of the recreational touring network as identified through the NEMO Plan;
- (b) washes which have traditionally been heavily used as motorized thoroughfares; and
- (c) washes occurring in areas where certain issues unreasonably complicate manageability (e.g., "checkerboard" pattern of public and private land ownership, particularly with high numbers of different owners).

In the context of motorized-vehicle access, the term "wash" is defined as a watercourse, either dry or with running or standing water, which by its physical nature (width, soil, slope, topography, vegetative cover, etc.) permits the passage of motorized vehicles. With respect to designation criterion (b), washes which exhibited significant evidence of motorized use at the time of the on-the-ground route inventory phase were generally identified as routes of travel on the draft inventory maps. For the purpose of route designation relative to the NEMO Plan, all wash routes identified on the draft inventory maps are categorized as "heavily used" thoroughfares and, therefore, are available for use if they are a primary recreational access linkage. All recreational touring routes that occur in washes appear on the draft inventory maps. All washes within proposed DT critical habitat which have not been identified as routes of travel on the draft inventory maps are not considered as being "heavily used" and, therefore, are not available for use.



## Appendix Q: Route Designation Process

It is acknowledged that due to the nature of washes--flowing water, as well as strong winds, can erase surface evidence of vehicular travel, especially where the washes are sandy--it was difficult to determine during the field survey if many of the washes traditionally receive motorized use. In other words, the presence of vehicle tracks as the only indicator of significant use may have resulted in some washes being left off the inventory if they did not exhibit sufficient evidence of such use at the time of the field survey.

In accordance with proposed management prescriptions for the NEMO Plan relative to motorized use of washes, as identified above, only those washes, which show significant evidence of having traditionally been used as motorized thoroughfares are available for use within proposed DWMA's. This results in the closure of an undetermined number of washes to motorized use.

Upon application of these criteria in the route designation process, routes which would warrant closure will be reviewed relative to identified access needs for a variety of public land users. Upon solicitation, these users provided information in 1998 and 1999 about routes that are necessary for the continued operation of their facility or facilities. Based on this information, recommendations pertaining to route designation in light of the need for access were developed.







# APPENDIX R

## LIST OF G-E-M RESOURCE AREAS

No.	Area	No.	Area	No.	Area
1	Adobe Mountain	26	Fish Lake Valley	51	Palo Verde Mountains
2	Alvord Mountain	27	Granite Mountains	52*	Panamint
3	Avawatz Mountain	28	Greenwater Range	53*	Picacho
4	Bighorn Mountains	29*	Hackberry	54	Piute Mountains
5*	Big Maria Mountains	30	Haiwee Reservoir	55	Providence Mountains
6	Boron	31*	Halloran	56*	Pyramid Peak
7	Borrego Springs	32*	Homer Mountain	57	Red Mountain
8	Bristol Lake	33	Imperial Valley	58*	Resting Spr. Range
9*	Bristol Mountains	34*	Inyo Mountains	59	Riverside Mountains
10	Cadiz/Danby Lake	35	Iron Mountain	60*	Rodman Mountains
11*	Cady Mountains	36	Ivanpah Valley	61	Sacramento Mtns
12*	Calico Mountains	37	Jawbone Canyon	62*	Saline Range
13*	Chuckwalla	38	Kingston Range	63*	Saline Mountains
14	Cima Dome	39*	Last Chance Range	64	Saline Mountains
15*	Clark Mountain	40	Marble Mountains	65	Santa Rosa Mountains
16	Coachella	41	Mojave Valley	66*	Searles
17	Copper Mountain	42	Morongo Valley	67	Sierra Pelona
18	Dale Lake	43	New York Mountains	68	Soledad/~osamond
19*	Darwin/Slate Range	44*	Old Dad Mountain	69	Stepladder Mountains
20*	Dumont Dunes	45	Old Woman Mountains	70	Stoddard
21	Eagle Mountain	46	Ord Mountain	71*	Talc City Hills
22	East Mesa-North	47	Orocopia Mountains	72	Turtle Mountains
23	East Mesa-South	48	Owens Peak	73	Vallecito Mountains
24	El Paso Mountains	49*	Owlshead Mountains	74*	Whipple Mountains
25*	Eureka Valley	50*	Palen/~cCoy Mountains	75	Yuha Basin

\*GRAs analyzed with a formal mineral report: (7,596,160 acres)

### BLM

### 3031 - ENERGY AND MINERAL RESOURCE ASSESSMENT

#### Mineral Potential Classification System\*

#### I. Level of Potential

O. The geologic environment, the inferred geologic processes, and the lack of mineral occurrences do not indicate potential for accumulation of mineral resources.

L. The geologic environment and the inferred geologic processes indicate low potential for accumulation of mineral resources.



- M.** The geologic environment, the inferred geologic processes, and the reported mineral occurrences or valid geochemical/geophysical anomaly indicate moderate potential for accumulation of mineral resources.
- H.** The geologic environment, the inferred geologic processes, the reported mineral occurrences and/or valid geochemical/geophysical anomaly, and the known mines or deposits indicate high potential for accumulation of mineral resources. The "known mines and deposits" do not have to be within the area that is being classified, but have to be within the same type of geologic environment.
- ND.** Mineral(s) potential not determined due to lack of useful data. This notation does not require a level-of-certainty qualifier.

## **II. Level of Certainty**

- A.** The available data are insufficient and/or cannot be considered as direct or indirect evidence to support or refute the possible existence of mineral resources within the respective area.
- B.** The available data provide indirect evidence to support or refute the possible existence of mineral resources.
- C.** The available data provide direct evidence but are quantitatively minimal to support or refute the possible existence of mineral
- D.** The available data provide abundant direct and indirect evidence to support or refute the possible existence of mineral resources.

**For the determination of No Potential use O/D.** This class shall be seldom used, and when used it should be for a specific commodity only. For example, if the available data show that the surface and subsurface types of rock in the respective area is batholithic (igneous intrusive), one can conclude, with reasonable certainty, that the area does not have potential for coal.

\* As used in this classification, potential refers to potential for the presence (occurrence) of a concentration of one or more energy and/or mineral resources. It does not refer to or imply potential for development and/or extraction of the mineral resource(s). It does not imply that the potential concentration is or may be economic, that is, be extracted profitably.



## Appendix S

### Wild and Scenic Rivers Eligibility Report For Cottonwood Creek

#### Introduction

This report presents the results of an eligibility study on potential additions to the National Wild and Scenic Rivers System for an identified riverine system in the Northern and Eastern Mojave Desert Management Planning Area. This eligibility report evaluates Cottonwood Creek in the White Mountains under the guidelines presented in the National Wild and Scenic River Act and within BLM Manual 8351. This report concludes with a discussion of management standards and guidelines applicable to rivers designated under the auspices of the National Wild and Scenic River Act.

#### Background

Federal agencies such as the Bureau of Land Management (BLM) have been mandated to evaluate potential additions to the National Wild and Scenic River System (NWSRS) per Section 5(d) of the Wild and Scenic Rivers Act of 1968 (16 United States Code 1271-1287, *et seq.*). Title 36 of the Code of Federal Regulations (CFR), Subpart 297, addresses management of Wild and Scenic Rivers. Title 43 CFR, Subpart 8350, specifically addresses designation of management areas. NWSRS study guidelines have also been published in Federal Register Volume 7, Number 173 (September 7, 1982), for public lands managed by the U.S. Departments of Agriculture and Interior. Additional guidance on wild and scenic rivers (WSR) is provided in BLM Manual 8351.

The NWSRS study process includes three regulatory steps:

1. Determination of what river(s) and/or river segment(s) are eligible for WSR designation;
2. Determination of eligible river(s) and/or segment(s) potential classification with respect to wild, scenic, recreational designation, or any combination thereof; and
3. Conducting a suitability study of eligible river(s) and/or segment(s) for inclusion into the NWSRS, via legislative action. An environmental impact statement (EIS) is commonly prepared to document the analysis needed for this suitability determination/WSR designation.

Any river or river segment on public lands found eligible for inclusion in the NWSRS is to be managed as if this river/segment were designated, until such time as a suitability determination is made. This requires management of public lands within 0.25 mile of the subject river/segment, to conform to management standards and guidelines presented in



applicable Federal agency manuals for wild and scenic rivers until the suitability determination is completed.

If a river or river segment is found suitable for inclusion to the NWSRS, the U.S. Congress must then pass legislation so designating this river/segment, prior to its formal addition to the NWSRS. In addition to Federal agencies, private individuals and/or groups, as well as State governments, can nominate rivers and/or segments for inclusion.

Only the first two determinations, i.e., eligibility and classification, are documented in this report and the impacts evaluated in the attached NEMO Environmental Impact Statement. The remaining suitability determination would be completed in a separate document, and analyzed in an EIS format. The results of the suitability determination would amend the applicable land use plan, i.e., the California Desert Conservation Area (CDCA) Plan (BLM 1980, as amended).

To meet eligibility criteria for wild and scenic river designation, a river or segment must be free-flowing in nature and must possess one or more outstandingly remarkable cultural, fish/wildlife, geologic, historic, recreational or scenic values within its immediate proximity. Free-flowing, as defined in Section 16(b) of the WSRA, reflects water flowing in a natural condition without impoundment, diversion, straightening, or other modification of the waterway. However, the existence of low dams, diversion works, and other minor structures at the time of designation, does not necessarily bar consideration for inclusion on the NWSRS. Nor are there any minimum river or segment lengths necessary for inclusion. Considerations in defining study rivers and/or study river segments, should include land ownership patterns, physical changes in the river/segments and their environs, as well as the type and amount of human modification of lands bordering identified rivers/segments.

The term "outstandingly remarkable" is not clearly defined in the NWSRS, necessitating professional judgement by submitting parties. In general, the term is defined as a resource which is considered more than simply ordinary, in the context of the local region. Examples include areas supporting an "A" Scenic Quality Rating (BLM Manual 8400); habitats for threatened and/or endangered plants/animals; exemplary physiographical, ecological, geological or recreational type locations; and areas where little human modification is evident or where terrain is rugged and physically-challenging to traverse.

### **Description of River Under Consideration**

Cottonwood Creek is the longest perennial stream on the East Side of the White Mountains. The headwaters originate at over 11,000 feet in the Inyo National Forest and flow for 17.4 miles before entering the public lands. This initial segment, from the headwaters to the forest boundary, was recommended as suitable for scenic designation by the U.S.F.S. in 1993. The 4.7 miles on public land evaluated in this report runs from the forest boundary to the mouth of Cottonwood Canyon.



The creek segment evaluated in this report is within Inyo County at the far northern edge of the California Desert Conservation Area. The nearest rural communities are Big Pine approximately 25 miles to the southwest and Bishop, California, 30 miles to the west. This segment is completely on lands managed by the BLM, Ridgecrest Field Office.

Modification has occurred at the far eastern boundary of this segment, where Cottonwood Creek has been diverted for agricultural uses.

### **Description of Segment(s) Under Consideration**

Considerations for NWSRS eligibility are based on resource values, land ownership patterns, shoreline development, proximity of roads and previous river modifications.

As a consequence of the analysis documented herein, an eligibility determination for a 4.7-mile long segment of the Cottonwood Creek occurring in California, has been made. The required suitability study on these segments will be deferred until completion of the NEMO Plan amendment to the CDCA Plan.

### **Recommended NWSRS Segment Classification and Land Ownership**

Once determined eligible, river segments are tentatively classified for study as either wild, scenic, or recreational, based on the degree of access and amount of development along the river area. If Congress designates a river or segment, the enabling legislation generally specifies the classification.

Accessibility, primitive nature, number and type of land developments, structures, water resource developments, and water quality were all considered in assigning classifications. The primary criteria for the three classifications are outlined below [from *A Compendium of Questions & Answers Relating to Wild & Scenic Rivers* (Technical Report of the Interagency Wild and Scenic Rivers Coordinating Council 1999)]:

**Wild River Areas:** Those rivers, or sections of rivers, that are free from impoundments, generally inaccessible except by trail (no roads), with watersheds or shorelines essentially primitive, and having unpolluted waters.

**Scenic River Areas:** Those rivers, or sections of rivers, that are free from impoundments, having shorelines or watersheds largely primitive and undeveloped, but accessible in places by roads (i.e., roads may cross but generally not parallel [in close proximity to] the river. These rivers or segments of rivers are usually more developed than wild and less developed than recreational. This classification may or may not include scenery as a Outstandingly Remarkable Value (ORV).

**Recreational River Areas:** Those rivers or sections of rivers that are readily accessible by road or railroad, may have had some development of the shoreline, and may have had some impoundment or diversion in the past. This classification, does not, however, imply that recreation is an Outstandingly Remarkable Value (ORV).



With these criteria in mind, as well as ORV data related to differing segments of Cottonwood Creek, the following classifications have been recommended for that portion of the river determined eligible for inclusion to the NWSRS:

<u>Riverine Segment</u>	<u>Classification</u>	<u>Public Land Miles</u>	<u>Private Land Miles</u>
USFS Boundary to Canyon Entrance	Recreational	4.7	0.00

### **Reasons for Consideration**

Cottonwood Creek was considered eligible for inclusion in the NWSRS because of values identified by the BLM in the completed CDCA Plan and during development of the ongoing NEMO Plan.

### **Outstandingly Remarkable Values**

ORVs for this portion of the Cottonwood Creek include the following:

**Animals and Plants:** Cottonwood Creek supports Willow/ Cottonwood Riparian Woodland considered an Unusual Plant Assemblage in the California Desert Conservation Area Plan. Wildlife supported by this plant community include a number of special status and/or sensitive bird species such as yellow warbler, yellow-breasted chat, prairie falcon, and sharp-shinned and Cooper's hawk. The basin is potentially suitable habitat for the southwestern willow flycatcher, a Federally endangered species. This segment of Cottonwood Creek supports over 70 species of birds.

The lower segment of Cottonwood Creek is also important habitat for Spotted bat, a Federal and California special concern species.

Paiute cutthroat trout, a Federally threatened species, inhabit the north fork of Cottonwood Creek in the Inyo National Forest. The recovery plan for the Paiute cutthroat trout calls for the expansion of the population throughout the Cottonwood Basin and into this segment. At present, the segment is habitat for brown trout, a popular game species.

**Recreational:** The presence of a perennial stream of this size in such an arid region offers visitors a unique and outstanding semi-primitive water-based recreation opportunity. Activities include trout fishing, hiking, bird watching, primitive camping, four-wheel drive exploration, upland game bird and mule deer hunting, photography, mountain biking and equestrian uses.

**Scenic:** The Cottonwood Creek segment identified as eligible on public lands has been inventoried as having a Class "A" (Excellent) scenic quality rating, per BLM Visual Resource Management guidelines. The lush riparian plant community along the creek bottom contrasts dramatically with the surrounding stark and primitive White Mountain



Wilderness Study Area located to the north and south of the drainage. Designation of these lower 4.7 miles, in addition to the upper segments on the Inyo National Forest, would provide protection for nearly the entire reach of the Cottonwood Creek drainage, a span of over 22 miles. With designation, these two segments of Cottonwood Creek would form the only Wild & Scenic River in the Great Basin Geographic Province protected entirely from the headwaters to its terminus.

### **Interim Protection**

The WSR Act and Federal guidelines require Federal agencies, upon determination of WSR eligibility, to provide interim protection and management for a river's free-flowing character and any identified outstandingly remarkable values, subject to valid existing rights, until such time as a suitability study is completed. Upon study completion, the Federal agency (BLM in this instance) then makes a recommendation to Congress, and Congress then acts on that recommendation.

### **Management Standards and Guidelines for National Wild and Scenic Rivers**

The Wild and Scenic Rivers Act (Public Law 90-542, as amended) established a method of providing Federal protection for certain of our remaining free-flowing rivers, and preserving these locales for the use and enjoyment of present and future generations. Such designated rivers benefit from the protective management which the act provides.

Section 10(a) of the WSR Act states:

**“Each component of the NWSRS shall be administered in such a manner as to protect and enhance the values which caused it to be included in said system without, insofar as is consistent therewith, limiting other uses that do not substantially interfere with public use and enjoyment of these values. In such administration, primary emphasis shall be given to protecting its esthetic, scenic, historic, archeologic, and scientific features. Management plans for any such component may establish varying degrees of intensity for its protection and development, based on the special attributes of the area.”** This section is generally interpreted by the Secretary of the Interior as a stated non-degradation and enhancement policy for all designated river areas, regardless of classification.

The following National Standards and Guidelines are summarized from BLM Manual 8351 [Wild and Scenic Rivers-Policy and Program Direction for Identification, Evaluation and Management (1992)]. These standards/guidelines are intended to apply to formally-designated rivers through incorporation into, or amendment of, resource or land use management plans. Incorporation or amendment efforts are typically completed within three years of formal WSR designation. However, these guidelines also apply, on an interim basis, as described above. For the sake of clarity, guidelines are presented for each separate river classification (wild, scenic and recreational).



## **Wild River Areas**

- are defined by the WSR Act to include “those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds and shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.”
- are to be managed with a primary objective of providing primary emphasis to protection of identified ORVs, while providing consistent, river-related, outdoor recreation opportunities in a primitive setting.
- where National Management Standards/Guidelines include allowable practices such as construction of minor structures related to wildlife habitat enhancement, protection from fire, and rehabilitation or stabilization of damaged resources, provided the area will remain natural-looking and the practices or structures will harmonize with the environment. Developments such as trails, bridges, occasional fencing, natural-appearing water diversions, ditches and water management devices, may be permitted if they are unobtrusive and do not have a significant, adverse impact on the natural character of the river area. The following Wild River Program Management Standards apply:

**a. Forestry Practices:** Cutting of trees not permitted except when needed in association with a primitive recreation experience (such as clearing trails, for visitor safety purposes, or for fire control). Timber outside the boundary, but within visual corridors, should where feasible, be managed and harvested in a manner designed to provide special emphasis on visual quality.

**b. Water Quality:** Conditions will be maintained or improved to meet Federal criteria or federally-approved State Standards. River management plans shall prescribe a process for monitoring water quality on a scheduled basis.

**c. Hydroelectric Power and Water Resource Development:** No such development would be permitted in the channel or river corridor. All water supply dams and major diversions are prohibited. The natural appearance and essentially primitive character of the river area must be maintained. Federal agency groundwater development for range, wildlife, recreation or administrative facilities may be permitted if there are no adverse effects on ORVs.

**d. Mining:** New mining claims and mineral leases are prohibited within 0.25 mile of the river. Valid existing claims would not be abrogated and, subject to existing regulations, e.g., 43 CFR 3809, and any future regulations the Secretary of the Interior may prescribe to protect the rivers included in the NWSRS, existing mining activity would be allowed to continue. All mineral activity on federally administered land must be conducted in a manner that minimizes surface disturbance, water sedimentation, pollution and visual impairment. Reasonable mining claim and mineral lease access will be permitted. Mining claims beyond 0.25 mile of the river, but within the wild river boundary, and



perfected after the effective date of designation, can be patented only as to the mineral estate and not the surface estate.

**e. Road and Trail Construction:** No new roads or other provisions for overland motorized travel would be permitted within a narrow incised river valley or, if the river valley is broad, within 0.25 mile of the river bank. A few inconspicuous roads leading to the boundary of the river area and unobtrusive trail bridges may be permitted.

**f. Agricultural Practices and Livestock Grazing:** Agricultural use is restricted to a limited amount of domestic livestock grazing and hay production to the extent currently being practiced. Row crops are prohibited.

**g. Recreation Facilities:** Major public use areas, such as campgrounds, interpretive centers, or administrative headquarters are located outside of wild river areas. Simple comfort and convenience facilities, such as toilets, tables, fireplaces, shelters and refuse containers may be provided as necessary within the river area. These should harmonize with the surroundings. Unobtrusive hiking and equestrian trail bridges could be allowed on tributaries, but would not normally cross the designated river.

**h. Public Use and Access:** Recreation use including, but not limited to, hiking, fishing, hunting and boating is encouraged in wild river areas to the extent consistent with the protection of the river environment. Public use and access may be regulated and distributed where necessary to protect and enhance wild river values.

**i. Rights-of-Way:** New transmission lines, natural gas lines, water lines, etc., are discouraged unless specifically prohibited outright by other plans, orders or laws. Where no reasonable alternative exists, additional or new facilities should be restricted to existing rights-of-way. Where new rights-of-way are unavoidable, locations and construction techniques will be selected to minimize adverse effects on wild river area-related values and fully evaluated during the site selection process.

**j. Motorized Travel -** Although this use can be permitted, it is generally not compatible with this river classification. Normally, motorized use will be prohibited in a wild river area. Prescriptions for management of motorized use may allow for search and rescue/emergency situations.

### **Scenic River Areas**

- are defined by the WSR Act to include **“those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.”**

- are to be managed with a primary objective of maintaining and providing outdoor recreation opportunities in a near-natural setting. The basic distinctions between “wild” and “scenic” classifications, involve varying degrees of development, types of land use, and road accessibility. In general, a wide range of agricultural, water management,



silvicultural and other practices could be compatible with scenic classification values, providing such practices are carried out in a manner not resulting in a substantial adverse effect on the river and its immediate environment.

-where National Management Standards/Guidelines include the same considerations set forth for wild rivers, except that motorized vehicle use may in some cases be appropriate and that development of larger scale public-use facilities within the river area, such as moderate-sized campgrounds, interpretive centers, or administrative headquarters would be compatible, if such facilities were screened from the river. The following Scenic River Program Management Standards apply:

a. **Forestry Practices:** Silvicultural practices, including timber harvesting could be allowed, provided that such practices are carried out in such a way that there is no substantial adverse effect on the river and its immediate environment. The river should be maintained in its near-natural condition.

Timber outside the boundary, but within the visual screen area, should be managed and harvested in a manner designed to provide special emphasis on visual quality. Preferably, reestablishment of tree cover would be through natural revegetation. Cutting of dead and down materials for fuel wood will be limited. Where necessary, restrictions on the use of wood for fuel may be prescribed.

b. **Water Quality:** Conditions will be maintained or improved to meet Federal criteria or federally-approved State Standards. River management plans shall prescribe a process for monitoring water quality on a scheduled basis.

c. **Hydroelectric Power and Water Resource Development:** No such development would be permitted in the channel or river corridor. Flood control dams and levees would be prohibited. All water supply dams and major diversions are prohibited. Maintenance of existing facilities and construction of some new structures would be permitted, provided that the area remains natural in appearance and the practices or structures harmonize with the surrounding environment.

d. **Mining:** Subject to existing regulations, e.g. 43 CFR 3809, and any future regulations the Secretary of the Interior may prescribe to protect the rivers included in the NWSRS, new mining claims and mineral leases can be allowed. All mineral activity on federally administered land must be conducted in a manner that minimizes surface disturbance, water sedimentation, pollution and visual impairment. Reasonable mining claim and mineral lease access will be permitted. Mining claims within the wild river boundary, and perfected after the effective date of designation, can be patented only as to the mineral estate and not the surface estate.

e. **Road and Trail Construction:** Roads may occasionally bridge the river and short stretches of conspicuous or lengthy stretches of inconspicuous and well-screened roads would be allowed. Maintenance of existing roads and any new roads will be based on the



type of use for which the roads are constructed and the type of use that will occur in the river area.

**f. Agricultural Practices and Livestock Grazing:** In comparison to wild river areas, a wider range of agricultural and livestock grazing uses are permitted, to the extent currently being practiced. Row crops are not considered as much of an intrusion of the “largely primitive” nature of scenic corridors, as long as there is not a substantial adverse effect on the natural-like appearance of the river area.

**g. Recreation Facilities:** Larger-scale public use areas, such as moderate-sized campgrounds, interpretive centers, or administrative headquarters, are allowed if such facilities are screened from the river.

**h. Public Use and Access:** Recreation use including, but not limited to, hiking, fishing, hunting and boating is encouraged in scenic river areas to the extent consistent with the protection of the river environment. Public use and access may be regulated and distributed where necessary to protect and enhance scenic river values.

**i. Rights-of-Way:** New transmission lines, natural gas lines, water lines, etc., are discouraged unless specifically prohibited outright by other plans, orders or laws. Where no reasonable alternative exists, additional or new facilities should be restricted to existing rights-of-way. Where new rights-of-way are unavoidable, locations and construction techniques will be selected to minimize adverse effects on scenic river area-related values and fully evaluated during the site selection process.

**j. Motorized Travel:** This use, on land or water, could be permitted, prohibited or restricted to protect river values. Prescriptions for management of motorized use may allow for search and rescue/emergency situations.

### **Recreational River Areas**

- are defined by the WSR Act to include *“those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, that may have undergone some development along their shorelines, and that may have undergone some impoundment or diversion in the past.”*

-are to be managed with an objective of protecting and enhancing existing recreational values. The primary objective is to provide opportunities for the public to participate in recreation activities dependent on, or enhanced by, the largely free-flowing nature of the river.

-where National Management Standards/Guidelines include allowable practices such as construction of recreation facilities in proximity to the river, although recreational river classification does not require extensive recreational developments. Such facilities are



still to be kept to a minimum, with visitor services provided outside the river area. Future construction of impoundments, diversions, straightening, rip-rapping and other modification of the water way or adjacent lands would not be permitted, except where such developments would not have a direct and adverse effect on the river and its immediate environment. The following Recreational River Program Management Standards apply:

- a. **Forestry Practices:** Silvicultural practices, including timber harvesting could be allowed under standard restrictions to avoid adverse effects on the river environment and its associated values.
- b. **Water Quality:** Conditions will be maintained or improved to meet Federal criteria or federally-approved State Standards. River management plans shall prescribe a process for monitoring water quality on a scheduled basis.
- c. **Hydroelectric Power and Water Resource Development:** No such development would be permitted in the channel or river corridor. Existing low dams, diversion works, rip rap and other minor structures may be maintained, provided the waterway remains generally natural in appearance. New structures may be allowed, provided that the area remains natural in appearance and the practices or structures harmonize with the surrounding environment.
- d. **Mining:** Subject to existing regulations, e.g. 43 CFR 3809, and any future regulations the Secretary of the Interior may prescribe to protect the rivers included in the NWSRS, new mining claims and mineral leases can be allowed. All mineral activity on federally administered land must be conducted in a manner that minimizes surface disturbance, water sedimentation, pollution and visual impairment. Reasonable mining claim and mineral lease access will be permitted. Mining claims within the wild river area boundary perfected after the effective date of designation can be patented only as to the mineral estate and not the surface estate.
- e. **Road and Trail Construction:** Existing parallel roads can be maintained on one or both riverbanks. There can be several bridge crossings and numerous river access points.
- f. **Agricultural Practices and Livestock Grazing:** In comparison to scenic river areas, lands may be managed for a full range of agricultural and livestock grazing uses, consistent with current practices.
- g. **Recreation Facilities:** Interpretive centers, administrative headquarters, campgrounds and picnic areas may be established in proximity to the river. However, recreational classification does not require extensive recreation development.
- h. **Public Use and Access:** Recreation use including, but not limited to, hiking, fishing, hunting and boating is encouraged in recreational river areas to the extent consistent with



the protection of the river environment. Public use and access may be regulated and distributed where necessary to protect and enhance recreational river values.

i. **Rights-of-Way:** New transmission lines, natural gas lines, water lines, etc., are discouraged unless specifically prohibited outright by other plans, orders or laws. Where no reasonable alternative exists, additional or new facilities should be restricted to existing rights-of-way. Where new rights-of-way are unavoidable, locations and construction techniques will be selected to minimize adverse effects on recreational river area-related values and fully evaluated during the site selection process.

j. **Motorized Travel:** This use, on land, will generally be permitted, on existing roads. Controls will usually be similar to that of surrounding lands. Motorized travel on water will be in accordance with existing regulations or restrictions.

### **Management Objectives Common to All Wild, Scenic and Recreational Rivers**

a. **Wilderness and Wilderness Study Areas:** Management of river areas which overlap designated wilderness areas or wilderness study areas will meet whichever standard is highest. If an area is released from wilderness study area status and the associated Interim Management Policy, the applicable river classification standards and guidelines would then apply.

b. **Fire Protection and Suppression:** Management and suppression of fires within a designated river area will be carried out in a manner compatible with contiguous Federal lands. On wildfires, suppression methods will be utilized that minimize the long term impacts on the river and river area. Pre-suppression and prevention activities will be conducted in a manner which reflects management objectives for the specific river segment. Prescribed fire may be utilized to maintain or restore ecological condition or meet objectives of the river plan.

c. **Insects, Diseases and Noxious Weeds:** The control of forest and rangeland pests, diseases and noxious weed infestations will be carried out in a manner compatible with the intent of the WSR Act and management objectives of contiguous Federal lands

d. **Cultural Resources:** Historic and prehistoric resource sites will be identified, evaluated and protected in a manner compatible with the objectives of the river and in accordance with applicable regulations and policies. Where appropriate, historic or prehistoric sites will be stabilized, enhanced and interpreted.

e. **Fish and Wildlife Habitat Improvement:** The construction and maintenance of minor structures for the protection, conservation, rehabilitation and enhancement of fish and wildlife habitat are acceptable, provided they do not affect the free-flowing characteristics of the river, are compatible with the classifications, that the area remains natural in appearance and the practices or structures harmonize with the surrounding environment.







## Appendix T

# Wild and Scenic Rivers Eligibility Report For Surprise Canyon

## Introduction

This report presents the results of an eligibility study on potential additions to the National Wild and Scenic Rivers System for an identified riverine system in the Northern and Eastern Mojave Desert Management Planning Area. This eligibility report evaluates Surprise Canyon in the Panamint Mountains under the guidelines presented in the National Wild and Scenic River Act and within BLM Manual 8351. This report concludes with a discussion of management standards and guidelines applicable to rivers designated under the auspices of the National Wild and Scenic River Act.

## Background

Federal agencies such as the Bureau of Land Management (BLM) have been mandated to evaluate potential additions to the National Wild and Scenic River System (NWSRS) per Section 5(d) of the Wild and Scenic Rivers Act of 1968 (16 United States Code 1271-1287, *et seq.*). Title 36 of the Code of Federal Regulations (CFR), Subpart 297, addresses management of Wild and Scenic Rivers. Title 43 CFR, Subpart 8350, specifically addresses designation of management areas. NWSRS study guidelines have also been published in Federal Register Volume 7, Number 173 (September 7, 1982), for public lands managed by the U.S. Departments of Agriculture and Interior. Additional guidance on wild and scenic rivers (WSR) is provided in BLM Manual 8351.

The NWSRS study process includes three regulatory steps:

1. Determination of what river(s) and/or river segment(s) are eligible for WSR designation;
2. Determination of eligible river(s) and/or segment(s) potential classification with respect to wild, scenic, recreational designation, or any combination thereof; and
3. Conducting a suitability study of eligible river(s) and/or segment(s) for inclusion into the NWSRS, via legislative action. An environmental impact statement (EIS) is commonly prepared to document the analysis needed for this suitability determination/WSR designation.

Any river or river segment on public lands found eligible for inclusion in the NWSRS is to be managed as if this river/segment were designated, until such time as a suitability determination is made. This requires management of public lands within 0.25 mile of the



subject river/segment, to conform to management standards and guidelines presented in applicable Federal agency manuals for wild and scenic rivers until the suitability determination is completed.

If a river or river segment is found suitable for inclusion to the NWSRS, the U.S. Congress must then pass legislation so designating this river/segment, prior to its formal addition to the NWSRS. In addition to Federal agencies, private individuals and/or groups, as well as State governments, can nominate rivers and/or segments for inclusion.

Only the first two determinations, i.e., eligibility and classification, are documented in this report and the impacts evaluated in the attached NEMO Environmental Impact Statement. The remaining suitability determination would be completed in a separate document, and analyzed in an EIS format. The results of the suitability determination would amend the applicable land use plan, i.e., the California Desert Conservation Area (CDCA) Plan (BLM 1980, as amended).

To meet eligibility criteria for wild and scenic river designation, a river or segment must be free-flowing in nature and must possess one or more outstandingly remarkable cultural, fish/wildlife, geologic, historic, recreational or scenic values within its immediate proximity. Free-flowing, as defined in Section 16(b) of the WSRA, reflects water flowing in a natural condition without impoundment, diversion, straightening, or other modification of the waterway. However, the existence of low dams, diversion works, and other minor structures at the time of designation, does not necessarily bar consideration for inclusion on the NWSRS. Nor are there any minimum river or segment lengths necessary for inclusion. Considerations in defining study rivers and/or study river segments, should include land ownership patterns, physical changes in the river/segments and their environs, as well as the type and amount of human modification of lands bordering identified rivers/segments.

The term "outstandingly remarkable" is not clearly defined in the NWSRS, necessitating professional judgement by submitting parties. In general, the term is defined as a resource which is considered more than simply ordinary, in the context of the local region. Examples include areas supporting an "A" Scenic Quality Rating (BLM Manual 8400); habitats for threatened and/or endangered plants/animals; exemplary physiographical, ecological, geological or recreational type locations; and areas where little human modification is evident or where terrain is rugged and physically-challenging to traverse.

### **Description of River Under Consideration**

Surprise Canyon is the longest perennial stream in the Panamint Mountains, a region known for its extreme aridity. The upper basin for Surprise Canyon originates within Death Valley National Park where the watercourse is an intermittent stream, appearing and disappearing beneath the canyon surface. At Brewery Spring, just within the National Park, the flow reappears and flows essentially as a perennial stream to the mouth of the canyon below Chris Wicht Camp. The stream flow is often 100-150 cfs in the canyon narrows, which is a substantial flow for a watercourse in the Mojave Desert.



The 5.0 miles of stream evaluated in this report, runs from the National Park boundary west to the mouth of Surprise Canyon.

The stream is within Inyo County and the California Desert Conservation Area and is entirely on lands managed by the BLM, Ridgecrest Field Office. The nearest rural community is Trona, approximately 25 miles to the southwest.

### **Description of Segment(s) Under Consideration**

Considerations for NWSRS eligibility are based on resource values, land ownership patterns, shoreline development, proximity of roads and previous river modifications.

As a consequence of the analysis documented herein, **an eligibility determination for two segments of Surprise Canyon have been made. These segments cover a total distance of 5.0 miles and are entirely within the State of California.** The required suitability study on these segments will be deferred until completion of the NEMO Plan amendment to the CDCA Plan.

### **Recommended NWSRS Segment Classification and Land Ownership**

Once determined eligible, river segments are tentatively classified for study as either wild, scenic, or recreational, based on the degree of access and amount of development along the river area. If a river or segment is designated by Congress, the enabling legislation generally specifies the classification.

Accessibility, primitive nature, number and type of land developments, structures, water resource developments, and water quality were all considered in assigning classifications. The primary criteria for the three classifications are outlined below [from *A Compendium of Questions & Answers Relating to Wild & Scenic Rivers* (Technical Report of the Interagency Wild and Scenic Rivers Coordinating Council 1999)]:

**Wild River Areas:** Those rivers, or sections of rivers, that are free from impoundments, generally inaccessible except by trail (no roads), with watersheds or shorelines essentially primitive, and having unpolluted waters.

**Scenic River Areas:** Those rivers, or sections of rivers, that are free from impoundments, having shorelines or watersheds largely primitive and undeveloped, but accessible in places by roads (i.e., roads may cross but generally not parallel [in close proximity to] the river. These rivers or segments of rivers are usually more developed than wild and less developed than recreational. This classification may or may not include scenery as a Outstandingly Remarkable Value (ORV).

**Recreational River Areas:** Those rivers or sections of rivers that are readily accessible by road or railroad, may have had some development of the shoreline, and may have had some impoundment or diversion in the past. This classification, does not, however, imply that recreation is an Outstandingly Remarkable Value (ORV).



With these criteria in mind, as well as ORV data related to differing segments of Surprise Canyon, the following classifications have been recommended for that portion of the river determined eligible for inclusion to the NWSRS:

<u>Riverine Segment</u>	<u>Classification</u>	<u>Public Land Miles</u>	<u>Private Land Miles</u>
Death Valley National Park Boundary to Chris Wicht Camp	Scenic	4.0	0.00
Chris Wicht Camp to Surprise Canyon ACEC West Boundary	Recreational	1.0	0.00

**Reasons for Consideration:** Surprise Canyon was considered eligible for inclusion in the NWSRS because of values identified by the BLM in the completed CDCA Plan and during development of the ongoing NEMO Plan.

**Outstanding Remarkable Values:** ORVs for this portion of the Surprise Canyon include the following:

**Animals and Plants:** The Canyon was designated as an Area of Critical Environmental Concern in the California Desert Conservation Area Plan in recognition of the area's significant natural and cultural resources. The area is also within the larger West Panamint Mountains Wildlife Habitat Management Area identified in the CDCA Plan.

Surprise Canyon supports an extensive Cottonwood/Willow Streamside Woodland, considered an Unusual Plant Assemblage in the CDCA Plan. This multistoried woodland covers approx. 2.0 miles of the total stream reach and is the most extensive riparian system in the Panamint Mountains. The remaining three miles of the stream reach is composed of other riparian/wetland dependant vegetation.

The Canyon also supports a Basic Saxicole Plant Assemblage, another Unusual Plant Assemblage identified in the CDCA Plan. The component species of this UPA are calciphytes, plants found almost exclusively on calcareous substrates, usually dolomites or limestones. Several Federal sensitive species have been located in Surprise Canyon in these limestone outcrops including Panamint dudleya (*Dudleya saxosa ssp. saxosa*) and Death Valley round-leaved phacelia (*Phacelia mustelina* ).

The talus slopes in the canyon also support another Federal sensitive species endemic to the Panamint Mountains, the Panamint daisy (*Enceliopsis covillei*).

The diversity of vegetative communities in Surprise Canyon contribute to providing niches for a diverse wildlife community, "perhaps one of the most diverse and significant in the California Desert Conservation Area" (Surprise Canyon ACEC Plan pg. 20).

Important species of wildlife include:



**Reptiles:** The Panamint alligator lizard (*Gerrhonatus panamintinus*) inhabits the rocky canyon bottom near permanent water overgrown with riparian vegetation. This lizard is a California BLM sensitive species and a California Department of Fish & Game special concern and protected species. The Panamint alligator lizard population in Surprise Canyon is a relict population, having been isolated here since the Pleistocene epoch.

**Birds:** Bird species inventories conducted in 1978 and 2000 have reported a rich assemblage of species for this five mile long canyon bottom. Over 70 species have been reported in the Surprise Canyon riparian area including several California BLM sensitive species - yellow warbler and prairie falcon. The canyon is also potentially suitable habitat for the Southwestern willow flycatcher, a Federal endangered species.

**Mammals:** The desert bighorn sheep, a California BLM sensitive species and California Department of Fish & Game fully protected species, inhabits the region surrounding the canyon. The water sources in Surprise Canyon are an essential resource for the desert bighorn sheep population in the Panamints.

The canyon also provides excellent foraging and roosting habitat for a variety of bat species which are California BLM and California D.F.G. sensitive species. These include the spotted bat, western mastiff bat, Townsend's big-eared bat, pallid bat, fringed myotis, Western small-footed myotis and Long-eared myotis. A rarely-seen mammal, the ringtail cat - a CDFG protected species, occurs in the rocky portions of the canyon.

**Recreational:** Surprise Canyon provides for an exceptional semi-primitive recreation opportunity. The canyon bottom forms a corridor thru the rugged 29,180 acre Surprise Canyon Wilderness. The eligible segments of Surprise Canyon offer outstanding hiking, birdwatching, botanizing, photography and backpacking opportunities. The hike from Chris Wicht Camp along this perennial stream and thru the narrow slot canyon to the abandoned ghost town of Panamint City, is one of the most outstanding treks in the California Desert.

**Scenic:** Using the Bureau's Visual Resource Management System, Surprise Canyon received the highest Scenic Quality Rating available (Class A). This was a reflection of the continued stream flow and riparian vegetation and the narrow slot canyon and waterfalls. At the far eastern edge of this eligible segment, along the north wall of the canyon, is a remarkable seep formation known as Limekiln Spring. This spring has a shaded grotto that is covered with thick growths of maidenhair fern and moss and is fed by a steady dripping curtain of water - a spectacular verdant feature set against the rough and parched canyon wall.

**Interim Protection:** The WSR Act and Federal guidelines require Federal agencies, upon determination of WSR eligibility, to provide interim protection and management for a river's free-flowing character and any identified outstandingly remarkable values, subject to valid existing rights, until such time as a suitability study is completed. Upon study completion, the Federal agency (BLM in this instance) then makes a recommendation to Congress, and Congress then acts on that recommendation.



## Management Standards and Guidelines for National Wild and Scenic Rivers

The Wild and Scenic Rivers Act (Public Law 90-542, as amended) established a method of providing Federal protection for certain of our remaining free-flowing rivers, and preserving these locales for the use and enjoyment of present and future generations. Such designated rivers benefit from the protective management which the act provides.

Section 10(a) of the WSR Act states:

**“Each component of the NWSRS shall be administered in such a manner as to protect and enhance the values which caused it to be included in said system without, insofar as is consistent therewith, limiting other uses that do not substantially interfere with public use and enjoyment of these values. In such administration, primary emphasis shall be given to protecting its esthetic, scenic, historic, archeologic, and scientific features. Management plans for any such component may establish varying degrees of intensity for its protection and development, based on the special attributes of the area.”** This section is generally interpreted by the Secretary of the Interior as a stated non-degradation and enhancement policy for all designated river areas, regardless of classification.

The following National Standards and Guidelines are summarized from BLM Manual 8351 [Wild and Scenic Rivers-Policy and Program Direction for Identification, Evaluation and Management (1992)]. These standards/guidelines are intended to apply to formally-designated rivers through incorporation into, or amendment of, resource or land use management plans. Incorporation or amendment efforts are typically completed within three years of formal WSR designation. However, these guidelines also apply, on an interim basis, as described above. For the sake of clarity, guidelines are presented for each separate river classification (wild, scenic and recreational).

### Wild River Areas

- are defined by the WSR Act to include “those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds and shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.”
- are to be managed with a primary objective of providing primary emphasis to protection of identified ORVs, while providing consistent, river-related, outdoor recreation opportunities in a primitive setting.
- where National Management Standards/Guidelines include allowable practices such as construction of minor structures related to wildlife habitat enhancement, protection from fire, and rehabilitation or stabilization of damaged resources, provided the area will remain natural-looking and the practices or structures will harmonize with the environment. Developments such as trails, bridges, occasional fencing, natural-appearing water diversions, ditches and water management devices, may be permitted if they are unobtrusive and do not have a significant, adverse impact on the natural



character of the river area. The following Wild River Program Management Standards apply:

**a. Forestry Practices:** Cutting of trees not permitted except when needed in association with a primitive recreation experience (such as clearing trails, for visitor safety purposes, or for fire control). Timber outside the boundary, but within visual corridors, should where feasible, be managed and harvested in a manner designed to provide special emphasis on visual quality.

**b. Water Quality:** Conditions will be maintained or improved to meet Federal criteria or federally-approved State Standards. River management plans shall prescribe a process for monitoring water quality on a scheduled basis.

**c. Hydroelectric Power and Water Resource Development:** No such development would be permitted in the channel or river corridor. All water supply dams and major diversions are prohibited. The natural appearance and essentially primitive character of the river area must be maintained. Federal agency groundwater development for range, wildlife, recreation or administrative facilities may be permitted if there are no adverse effects on ORVs.

**d. Mining:** New mining claims and mineral leases are prohibited within 0.25 mile of the river. Valid existing claims would not be abrogated and, subject to existing regulations, e.g., 43 CFR 3809, and any future regulations the Secretary of the Interior may prescribe to protect the rivers included in the NWSRS, existing mining activity would be allowed to continue. All mineral activity on federally administered land must be conducted in a manner that minimizes surface disturbance, water sedimentation, pollution and visual impairment. Reasonable mining claim and mineral lease access will be permitted. Mining claims beyond 0.25 mile of the river, but within the wild river boundary, and perfected after the effective date of designation, can be patented only as to the mineral estate and not the surface estate.

**e. Road and Trail Construction:** No new roads or other provisions for overland motorized travel would be permitted within a narrow incised river valley or, if the river valley is broad, within 0.25 mile of the river bank. A few inconspicuous roads leading to the boundary of the river area and unobtrusive trail bridges may be permitted.

**f. Agricultural Practices and Livestock Grazing:** Agricultural use is restricted to a limited amount of domestic livestock grazing and hay production to the extent currently being practiced. Row crops are prohibited.

**g. Recreation Facilities:** Major public use areas, such as campgrounds, interpretive centers, or administrative headquarters are located outside of wild river areas. Simple comfort and convenience facilities, such as toilets, tables, fireplaces, shelters and refuse containers may be provided as necessary within the river area. These should harmonize with the surroundings. Unobtrusive hiking and equestrian trail bridges could be allowed on tributaries, but would not normally cross the designated river.



**h. Public Use and Access:** Recreation use including, but not limited to, hiking, fishing, hunting and boating is encouraged in wild river areas to the extent consistent with the protection of the river environment. Public use and access may be regulated and distributed where necessary to protect and enhance wild river values.

**i. Rights-of-Way:** New transmission lines, natural gas lines, water lines, etc., are discouraged unless specifically prohibited outright by other plans, orders or laws. Where no reasonable alternative exists, additional or new facilities should be restricted to existing rights-of-way. Where new rights-of-way are unavoidable, locations and construction techniques will be selected to minimize adverse effects on wild river area-related values and fully evaluated during the site selection process.

**j. Motorized Travel** - Although this use can be permitted, it is generally not compatible with this river classification. Normally, motorized use will be prohibited in a wild river area. Prescriptions for management of motorized use may allow for search and rescue/emergency situations.

### **Scenic River Areas**

- are defined by the WSR Act to include **“those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.”**

- are to be managed with a primary objective of maintaining and providing outdoor recreation opportunities in a near-natural setting. The basic distinctions between “wild” and “scenic” classifications, involve varying degrees of development, types of land use, and road accessibility. In general, a wide range of agricultural, water management, silvicultural and other practices could be compatible with scenic classification values, providing such practices are carried out in a manner not resulting in a substantial adverse effect on the river and its immediate environment.

-where National Management Standards/Guidelines include the same considerations set forth for wild rivers, except that motorized vehicle use may in some cases be appropriate and that development of larger scale public-use facilities within the river area, such as moderate-sized campgrounds, interpretive centers, or administrative headquarters would be compatible, if such facilities were screened from the river. The following Scenic River Program Management Standards apply:

**a. Forestry Practices:** Silvicultural practices, including timber harvesting could be allowed, provided that such practices are carried out in such a way that there is no substantial adverse effect on the river and its immediate environment. The river should be maintained in its near-natural condition.

Timber outside the boundary, but within the visual screen area, should be managed and harvested in a manner designed to provide special emphasis on visual quality. Preferably, reestablishment of tree cover would be through natural revegetation. Cutting



of dead and down materials for fuel wood will be limited. Where necessary, restrictions on the use of wood for fuel may be prescribed.

**b. Water Quality:** Conditions will be maintained or improved to meet Federal criteria or federally-approved State Standards. River management plans shall prescribe a process for monitoring water quality on a scheduled basis.

**c. Hydroelectric Power and Water Resource Development:** No such development would be permitted in the channel or river corridor. Flood control dams and levees would be prohibited. All water supply dams and major diversions are prohibited. Maintenance of existing facilities and construction of some new structures would be permitted, provided that the area remains natural in appearance and the practices or structures harmonize with the surrounding environment.

**d. Mining:** Subject to existing regulations, e.g. 43 CFR 3809, and any future regulations the Secretary of the Interior may prescribe to protect the rivers included in the NWSRS, new mining claims and mineral leases can be allowed. All mineral activity on federally administered land must be conducted in a manner that minimizes surface disturbance, water sedimentation, pollution and visual impairment. Reasonable mining claim and mineral lease access will be permitted. Mining claims within the wild river boundary, and perfected after the effective date of designation, can be patented only as to the mineral estate and not the surface estate.

**e. Road and Trail Construction:** Roads may occasionally bridge the river and short stretches of conspicuous or lengthy stretches of inconspicuous and well-screened roads would be allowed. Maintenance of existing roads and any new roads will be based on the type of use for which the roads are constructed and the type of use that will occur in the river area.

**f. Agricultural Practices and Livestock Grazing:** In comparison to wild river areas, a wider range of agricultural and livestock grazing uses are permitted, to the extent currently being practiced. Row crops are not considered as much of an intrusion of the "largely primitive" nature of scenic corridors, as long as there is not a substantial adverse effect on the natural-like appearance of the river area.

**g. Recreation Facilities:** Larger-scale public use areas, such as moderate-sized campgrounds, interpretive centers, or administrative headquarters, are allowed if such facilities are screened from the river.

**h. Public Use and Access:** Recreation use including, but not limited to, hiking, fishing, hunting and boating is encouraged in scenic river areas to the extent consistent with the protection of the river environment. Public use and access may be regulated and distributed where necessary to protect and enhance scenic river values.

**i. Rights-of-Way:** New transmission lines, natural gas lines, water lines, etc., are discouraged unless specifically prohibited outright by other plans, orders or laws. Where



no reasonable alternative exits, additional or new facilities should be restricted to existing rights-of-way. Where new rights-of-way are unavoidable, locations and construction techniques will be selected to minimize adverse effects on scenic river area-related values and fully evaluated during the site selection process.

j. **Motorized Travel:** This use, on land or water, could be permitted, prohibited or restricted to protect river values. Prescriptions for management of motorized use may allow for search and rescue/emergency situations.

### **Recreational River Areas**

- are defined by the WSR Act to include *“those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, that may have undergone some development along their shorelines, and that may have undergone some impoundment or diversion in the past.”*

-are to be managed with an objective of protecting and enhancing existing recreational values. The primary objective is to provide opportunities for the public to participate in recreation activities dependent on, or enhanced by, the largely free-flowing nature of the river.

-where National Management Standards/Guidelines include allowable practices such as construction of recreation facilities in proximity to the river, although recreational river classification does not require extensive recreational developments. Such facilities are still to be kept to a minimum, with visitor services provided outside the river area. Future construction of impoundments, diversions, straightening, rip-rapping and other modification of the water way or adjacent lands would not be permitted, except where such developments would not have a direct and adverse effect on the river and its immediate environment. The following Recreational River Program Management Standards apply:

a. **Forestry Practices:** Silvicultural practices, including timber harvesting could be allowed under standard restrictions to avoid adverse effects on the river environment and its associated values.

b. **Water Quality:** Conditions will be maintained or improved to meet Federal criteria or federally-approved State Standards. River management plans shall prescribe a process for monitoring water quality on a scheduled basis.

c. **Hydroelectric Power and Water Resource Development:** No such development would be permitted in the channel or river corridor. Existing low dams, diversion works, rip rap and other minor structures may be maintained, provided the waterway remains generally natural in appearance. New structures may be allowed, provided that the area remains natural in appearance and the practices or structures harmonize with the surrounding environment.



d. **Mining:** Subject to existing regulations, e.g. 43 CFR 3809, and any future regulations the Secretary of the Interior may prescribe to protect the rivers included in the NWSRS, new mining claims and mineral leases can be allowed. All mineral activity on federally administered land must be conducted in a manner that minimizes surface disturbance, water sedimentation, pollution and visual impairment. Reasonable mining claim and mineral lease access will be permitted. Mining claims within the wild river area boundary perfected after the effective date of designation can be patented only as to the mineral estate and not the surface estate.

e. **Road and Trail Construction:** Existing parallel roads can be maintained on one or both riverbanks. There can be several bridge crossings and numerous river access points.

f. **Agricultural Practices and Livestock Grazing:** In comparison to scenic river areas, lands may be managed for a full range of agricultural and livestock grazing uses, consistent with current practices.

g. **Recreation Facilities:** Interpretive centers, administrative headquarters, campgrounds and picnic areas may be established in proximity to the river. However, recreational classification does not require extensive recreation development.

h. **Public Use and Access:** Recreation use including, but not limited to, hiking, fishing, hunting and boating is encouraged in recreational river areas to the extent consistent with the protection of the river environment. Public use and access may be regulated and distributed where necessary to protect and enhance recreational river values.

i. **Rights-of-Way:** New transmission lines, natural gas lines, water lines, etc., are discouraged unless specifically prohibited outright by other plans, orders or laws. Where no reasonable alternative exists, additional or new facilities should be restricted to existing rights-of-way. Where new rights-of-way are unavoidable, locations and construction techniques will be selected to minimize adverse effects on recreational river area-related values and fully evaluated during the site selection process.

j. **Motorized Travel:** This use, on land, will generally be permitted, on existing roads. Controls will usually be similar to that of surrounding lands. Motorized travel on water will be in accordance with existing regulations or restrictions.

### **Management Objectives Common to All Wild, Scenic and Recreational Rivers**

a. **Wilderness and Wilderness Study Areas:** Management of river areas which overlap designated wilderness areas or wilderness study areas will meet whichever standard is highest. If an area is released from wilderness study area status and the associated Interim Management Policy, the applicable river classification standards and guidelines would then apply.



**b. Fire Protection and Suppression:** Management and suppression of fires within a designated river area will be carried out in a manner compatible with contiguous Federal lands. On wildfires, suppression methods will be utilized that minimize the long term impacts on the river and river area. Pre-suppression and prevention activities will be conducted in a manner which reflects management objectives for the specific river segment. Prescribed fire may be utilized to maintain or restore ecological condition or meet objectives of the river plan.

**c. Insects, Diseases and Noxious Weeds:** The control of forest and rangeland pests, diseases and noxious weed infestations will be carried out in a manner compatible with the intent of the WSR Act and management objectives of contiguous Federal lands

**d. Cultural Resources:** Historic and prehistoric resource sites will be identified, evaluated and protected in a manner compatible with the objectives of the river and in accordance with applicable regulations and policies. Where appropriate, historic or prehistoric sites will be stabilized, enhanced and interpreted.

**e. Fish and Wildlife Habitat Improvement:** The construction and maintenance of minor structures for the protection, conservation, rehabilitation and enhancement of fish and wildlife habitat are acceptable, provided they do not affect the free-flowing characteristics of the river, are compatible with the classifications, that the area remains natural in appearance and the practices or structures harmonize with the surrounding environment.









**UNITED STATES DEPARTMENT OF INTERIOR**

**BUREAU OF LAND MANAGEMENT**

